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A VISIT TO GERMANY.

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WE entered Germany just one week after peace had been signed, at Weimar.

Everyone we saw—men, women and children—had lost weight, many of them to the point of emaciation. This loss of weight is very serious because it is a sign of lowered nutrition, and consequently diminished resistance to infectious diseases, especially in the young. Whenever we saw children gathered together we were struck by the greyish pallor which has taken the place of the ruddy colour formerly so characteristic of these blond German children, and also by the thin necks and wrists and legs, even when the face itself was fairly round in its outline. It is, of course, impossible to judge of emaciation in a child unless very extreme without stripping it, but in several places we were shown the children with their clothes off. The "Luftbad" in Frankfurt does not take children who are really ill, but many of the naked boys we saw there were quite shockingly wasted.

The shoulder-blades of the boys stand out like wings, their ribs and their vertebræ can be counted, and their bony little arms and

legs look still thinner because of the swollen joints which rachitis causes so commonly. The narrow, sunken chests bode ill for the future in the society where tuberculous infection will certainly be wide-spread.

It is after the sixth year of life that the effects of under-feeding become increasingly evident, for there is not enough food to supply the needs of a growing child unless a good deal can be added by the purchase of smuggled goods. Already the school children of Leipzig average two to four centimetres shorter than the pre-war average. In Frankfurt we were told that the average loss of weight for the younger children was 9 to 10 per cent., for the older 10 to 15 per cent., and in this last year a loss in average height is becoming evident.

It is certainly fair to conclude that the shortage of food has been registered on the bodies of German women and children for a period of nearly three years, and of course it continues to register still.

From notes selected at random we find descriptions such as the following : "A girl, aged 8 years, weighing 30 lb. ; one of the same age weighing 28 lb. ; a third, aged 12 years, weighing 46 lb. These are not supposed to be ill, only in need of food and fresh air." That was in Frankfurt. In the notes taken in Halle we find mention of a child, aged $3\frac{1}{2}$ years, weighing 14 lb. ; a boy, aged 12 years, weighing 54 lb. ; a girl, aged 11 years, weighing 50 lb. ; and the following record of a four-year-old who had been under hospital care for malnutrition since February last. The miserably inadequate food is revealed in this child's history : "Weight in February, 27 lb. ; in March, 25 lb. 8 oz. ; in April, 26 lb. 7 oz. ; in May, 25 lb. ; and in June, 26 lb. 4 oz."

The supply of milk for Berlin in 1914 was a million litres. There was a quick falling off in quantity in 1915, which continued till, in the winter of 1918–19, it reached 150,000. Milk is given to children up to the age of four years at the rate of a pint a day, and in exceptional cases to delicate children up to the age of six. At times there has been no milk even for the four-year-olds. Among adults only the cases of open tuberculosis may have as much as a pint of milk, and acute nephritis entitles the patient to half a pint, chronic nephritis to none. This latter is especially hard, as patients with nephritis on a milk diet may recover. We met one well-to-do woman who spoke with the greatest bitterness of her brother who had died and for whom she had been unable to get milk.

This fall in the milk supply is due chiefly to the lack of rich

fodder which Germany has always been obliged to import, and without which her cows yield less than one-third of the usual amount. The city of Berlin has a herd of 7000 cows, which are fed upon potato-parings and vegetable trimmings carefully collected from householders every morning. If they could import oil cakes for fodder they could ration it to the peasants and thus control the milk of these peasants, which now passes, in part at least, to the smuggling trade—what the Germans call "Schleichhandel."

We found later in Chemnitz that the milk supply had fallen from 60,000 litres daily to 7000. This milk goes to infants and nursing mothers and, according to supply, to children up to the age of four. Frankfurt's former supply of milk was 220,000 litres daily, which has fallen to 15,000 litres. This does not promise to improve, since the hinterland from which Frankfurt has always drawn her supply of milk is now in the occupied territory and its produce used by the French Army.

The population in general is allowed to buy weekly 30 grm. (1 oz.) of butter, 60 grm. (2 oz.) of vegetable margarine, 125 grm. (4·2 oz.) of animal fats. This, of course, is only permission to buy, and many people cannot afford butter at 23 to 36 marks a pound, or American bacon at 12 to 16 marks a pound. We were told that probably as much as 60 per cent. of the food in Germany passes into the "Schleichhandel" to well-to-do people at enormous prices, and that there is constant speculation in food-cards. There is very little fat in the meat that reaches the market from German sources, for the lack of fodder has greatly reduced all the cattle.

We saw with our own eyes a striking demonstration of the insufficiency of food for the sick when we visited the kitchen of the great university hospital in Berlin, the Charité. There are 2200 people in the institution to be fed, and since the revolution the "Einheitessen" rule has been in force—that is, exactly the same food in kind and quantity is served to everyone connected with the hospital—from the scrub-woman to the head professor. We were shown the supply of meat for one day. It consisted of lumps of very lean beef with much bone, already thoroughly boiled in order to make soup. It filled a tray about $2\frac{1}{2}$ by $1\frac{1}{2}$ ft. in size and about 5 in. deep. This was the meat allowance for 2200 people, but they do not get it every day. The weekly *per capita* allowance for the sick is 250 grm., but after the bone has been removed it is only 150 grm., which, we were told, makes the daily allowance just the legal weight of a letter. The bread allowance of

the hospital is 350 grm. daily, but many of the sick cannot eat this bread, for it is made of war-meal with the addition of ground dried vegetables, which makes it damp and liable to mould or ferment in a few days. There is only one loaf of white bread for ten patients weekly. They were using ten times as much green vegetables as formerly, because they had no dried beans, peas or rice. For this week the supply of potatoes was only 1 lb. *per capita*. There has been no fish since the Armistice, when the blockade provisions prohibited fishing in the North Sea. With this diet of unsatisfactory bread was served the inevitable marmalade, made of vegetable fibre, a minimum of fruit, the whole coloured with aniline and sweetened with saccharine. It is obvious that such a diet is insufficient, and that there is little chance of real recovery from sickness. The director of the hospital was suffering from a fracture of the hip, which would not heal because his powers of recuperation were at so low an ebb from under-feeding.

As we went through other institutions we often had an opportunity to see the food served to the inmates. In the City Orphanage in Berlin children with rickets received for their noon-day dinner a soup of war-meal and dried vegetables with a few drops of vegetable margarine floating on the top. In a *crèche* in Frankfurt for well children they were serving at noon a meal soup made with one pound of margarine for 100 children. In the afternoon they were given a mug of German tea, made from dried leaves of strawberry and other plants, without milk, and with only three-quarters of a pound of sugar to forty quarts of tea. Many of the children in the *crèche* showed signs of rickets, and all of them of malnutrition, save one small boy, conspicuous by his rosy cheeks, who had just returned from a visit in the country to his grandmother.

In Leipzig we visited a "Landkolonie," a large playground, in which 625 children from six to twelve years of age spend the day and are given a mid-day dinner. It consisted of one pint of meal soup to which had been added a little dried vegetable. Out of 190 children seated at one time in the dining-room, all, save one, were pale and anæmic. The director made several announcements to the children. All of these were received with a curious sort of apathy by the listless children, but when he said that he hoped they would have milk in their soup to-morrow or the next day, the announcement was greeted by a shrill and spontaneous cheer. Here, as everywhere, the effect of food privation was more striking on the boys than on the girls. This was usually explained by the greater activity of the boys, although one professor regarded it as another

evidence of the greater resistance of the female sex, which has always been shown in the lower death-rate of girl babies.

The "Luftbad" in Frankfurt is a very original mode of treatment for delicate children. The children in bathing suits—on the boys' side they wear a very abridged form—are kept in the sun and open air for three hours a day, some of them playing, but others lying down, according to the doctor's orders. The children used to be given a large glass of milk and all the bread and butter they wanted. Now the city allowance for them is half a pound of soup-meal a month *per capita*, to which the patrons add fresh vegetables, but they have no fat. Many of the boys exhibited such extreme emaciation as to remind us of pictures of Indian famines, yet we were told that these children had greatly improved during their months of treatment in the "Luftbad." Of course many brought bread carefully measured out by their mothers from the home allowance, for it would be illegal for the management of the "Luftbad" to secure an extra supply of bread. At another charming outdoor charity for little children, who are taken to spend each day in the woods, we again encountered the afternoon tea without milk, and so little sweetened that we were surprised the children were willing to drink it.

In each city, except Halle, we visited public kitchens to which men and women of the working and middle classes come to buy cooked food, either taking it home or eating it on the premises. We visited six of these in Berlin, two in Leipzig, one in Chemnitz, and one in Frankfurt. In Berlin a meal could be bought for a mark and a-quarter or a mark and a-half. For this they received a soup of meal or dried vegetables, then a dish of boiled greens, part fresh and part dried, and another dish of dried cabbage or potatoes, and for dessert, to quote from notes taken on the spot, "dreadful pastry, slimy brown cake, or loathsome aniline jelly-like stuff." In Leipzig the kitchen we visited was serving 10,000 boiled dumplings made of war-meal—the most nearly inadequate one we saw. They were given one or two quarts, as they chose, of a thick soup of potatoes, carrots and noodles; this was made in a central kitchen and distributed. The food in Berlin seemed sufficient in quantity, but poor in nutrition and very tasteless, and while in Chemnitz and Leipzig the quality was better and more attractive, the quantity was very insufficient. The children in Frankfurt had to eat a harmfully large quantity of soup in order to satisfy their hunger. Of course, no one knows better than the Germans themselves the harmfulness of this bulky diet, so poor in nutritive qualities. German scientists

have made every possible effort to get at new sources of fat every bone is saved, as it may be crushed and the fat extracted from the marrow. They have taken the germs from the rye kernel for the sake of the trace of fat; they even collect the fats from the dish-water from the great hotels.

We were constantly reminded that the paucity of food does not affect only the poorer people. A professor who was taking us through a children's ward admitted rather reluctantly that his breakfast consists of black war-coffee with bread and marmalade, and he eats no mid-day meal, and his supper is only soup and bread.

It was in Saxony especially that they spoke with horror of the "time of turnips," when for three or four months the entire population had almost nothing to eat except white turnips. Many grown people have acquired a permanent dyspepsia from that experience, and it was of course impossible for many of the children to digest such food. The village schoolmaster in Barenstein told us that in the course of each morning nine or ten children would leave the room, vomit their breakfasts, and stagger back too miserable and sick to hold up their heads, much less to study their lessons. We were constantly told that the amount of school work required of the children had to be lessened in order to meet their lowered vitality, and that owing to their absolute inability to do the school work many children of the poor in Germany have practically lost four years of school out of their possible eight. The number of school children was greatly reduced also by actual illness. We were told in Halle by one of the school doctors that the school population had actually fallen off one-half since the war began. Ruth von der Leydon and other probation officers of the Juvenile Court of Berlin told us much of the increased criminality among the former pupils of the higher grade school. These growing boys and girls, who, owing to the shortage of labour during the long course of the war, undertook hard factory work, were simply unable to get enough to eat from the rationed supplies. From this root cause sprang many thefts of food, falsification of bread-cards, housebreaking into bakeries and mills, stealing potatoes and turnips in the fields, taking part in the fraudulent handling of food in the hope that some would be given to them, and so forth. In addition to hunger, many of these children, unable to bear any longer the anxiety of their mothers, stole food to take home, reckless of the consequences to themselves. Of course, they often stole money from their parents, sold the clothing of their brothers and sisters, or such household articles as they could pilfer. To quote Miss von der Leydon,

"children and youths from the most respectable families had come before the Court through their sheer inability to withstand the temptations to which the blockade so cruelly subjects them." It has been said of these half-starved children that they illustrate the saying of Rousseau, "The body must have strength to obey the soul; the weaker the body the more it commands."

Tuberculosis.—On our first evening in Berlin, Prof. Kayserling, one of the foremost German authorities on tuberculosis, came to our hotel and gave us a brief outline of the terrible results of the prolonged food blockade as shown in the increase of tuberculosis in German cities. Country districts have apparently suffered less. He began by saying that in 1900 at the International Congress for Tuberculosis in London, statistics were shown covering the previous thirty years of tuberculosis in London and in Berlin, and the English and Germans were agreed in predicting that if the same rate of progress in the control of the disease could be maintained in the future, some forty years more would see its practical extinction in those two countries. Now all the progress of years had been swept away and Germany is back at the point she had reached in the eighties, before Koch's discovery of the tubercle bacillus revolutionised all our ideas about the disease, and led to modern methods of control. That the increased rate is due to food and not to the other incidents of war is shown by the slight rise before the tightening of the blockade and the rapid rise after it. In 1914 the deaths from tuberculosis in German cities of over 15,000 inhabitants was 40,374; by 1916 it had risen only to 48,779, but by 1917 it was 67,860, and for the first half of 1918 it was 67,860. Since tuberculosis is not a disease that kills quickly, Prof. Kayserling expects that the rate for the last half of 1918 and that of 1919 will prove to be still higher. It must also be remembered that the numbers of people in the susceptible ages were decidedly diminished by the loss of young men who had fallen in the war. The almost complete lack of fats, including cod-liver oil, the first instalment of which reached Germany through Dr. Rotten in May of this year, makes it impossible to strengthen the body against infection, or help it to combat infection after it has taken place. Matters were still worse after the Armistice, when the demobilised soldiers suddenly returned to the cities to share in the scanty food supply at the same time that transportation became more demoralised than ever because of the surrender of rolling stock. So striking has been the effect of partial starvation on tuberculosis among all classes that Kayserling says German physicians are beginning to say that tuberculosis should be regarded primarily not as an

infectious disease, but as a disease of nutrition, to be controlled much more by feeding than by preventing infection. He allowed us to interview the mothers who brought their children for examination and to find out what the little things had to eat. The answer was almost always the same. For breakfast "Ersatz" coffee without milk or sugar, bread, and usually, but not always, marmalade for sugar. One lucky child had had a bit of lard on his bread that morning. For dinner at noon soup made of war-meal and dried vegetables, sometimes potatoes, and rarely beans. Supper was a repetition of breakfast. If the child was under four years he was receiving a pint of milk a day, and this was true for part of the time of the six-year-olds, but then after six years the allowance stopped. One little girl of eleven, who looked about eight, was discovered to be tuberculous. She was getting a little meat once a week, no butter, nor eggs or milk. Kayserling gave the mother an order for a pint of milk daily, but it will cost her a mark and a-half each time, and will constitute the only possible change in the child's diet, which, even with this addition, will be too meagre for a healthy child, to say nothing of one whose hope of life lies in a generous allowance of animal fat.

Many of the mothers of this clinic looked so emaciated that one could not help believing that, scanty as their rations were, they took only part for themselves and gave the rest to their children. One specially wretched woman said she was the mother of six children, one of whom had recently died of tuberculosis, and she had brought her little daughter to be examined for the same disease. As all her children were over six years they had no milk, except the half pint which was allotted to her because she is suffering from a serious form of nephritis. "And how much of that goes into your stomach?" Prof. Kayserling asked. The woman only shrugged her shoulders. At the end we asked him what he could do for these cases, and he answered: "Almost nothing. I see the conditions, and I know how they could be dealt with, but I cannot put my knowledge to use. I have not the tools of my trade with which to work." While in former years Kayserling used to see about fifty cases of tuberculosis in children in the course of a year, now he sees as many in a month.

We heard still more about tuberculosis in the great hospital of the Charité connected with the University when we visited Prof. Czerny's wards there. Fully half of the children here are tuberculous, a condition which they attributed first to increased infection—for so many mothers have contracted tuberculosis through over-

work and under-feeding, and so many fathers have come back from the war tuberculous—and second, to the loss of resistance in the children's bodies because of starvation for fats. The men in charge in this hospital and in the Kaiser and the Kaiserin Friedrich Hospital for Children told us that they feel sure the effects of the hunger blockade will be apparent throughout the life-time of this generation, and perhaps longer. These effects cannot be rightly estimated by simply looking at death records. Most of the children infected with tuberculosis will not die now; the majority do not as yet even show signs of the disease. But each coming year for twenty years will show a far higher rate of sickness from tuberculosis than Germany has known for a decade, because the seeds of the disease which have fastened themselves on these weakened children will do their work later on—perhaps in puberty, when resistance is always lowered, perhaps in the twenties under the strain of child-bearing or of industrial life. Nor is it only tuberculosis which will have increased; all infectious diseases will meet with a lessened resistance, all over-strain and hard work will do a greater injury, and even the children of the war children may be below the normal standard.

In the wards for tubercular children we saw varieties of the disease which used to be regarded as medical curiosities, so extreme as to be seen only in primitive people with no racial immunity to the disease. Germany's racial immunity, if there really be such a thing, was destroyed by the blockade, and now in her hospitals one can see the most terrible forms of this infection, and not as exceptional cases, but fairly commonly. Not only in the Charité, where one expects to see picked cases, but in the hospitals of Halle, Leipzig and Frankfurt we saw children with enormously developed tuberculosis of the glands, with tuberculosis of several bones at once, sometimes as many as twelve, with involvement of both lungs, and cavity formations, such as ordinarily occurs only in grown people. There were tiny children with tuberculosis of the breast-bone, of the bones of the skull, even of the bones of the jaw with involvement of the eye-socket, and many cases of the formerly rare tuberculosis of the skin—lupus. There was added tragedy in the impotence of the physicians, who, while equipped with all that science in this field could provide, and so entirely capable of dealing with each case in the best possible way, could only struggle with makeshifts and look on at their own failures, because, without nourishing food, the fight against this disease must be a losing one. Yet if only food could be procured these child cases of bone and gland tuberculosis could be made to improve amazingly.

The City Orphanage in Berlin, which is really a home for dependent children, whether they are actually orphans or not, is no supposed to take any but healthy children, but it is impossible now to reject the tuberculous and rachitic, for they are too numerous. It has long been the rule here to give the Pirquet skin test to the children to determine the presence of tuberculous infection. Before the war this test was positive for 10 per cent., but now is positive for 30 per cent.; while infection has increased three-fold, actua illness has increased five-fold, as shown by the number of cases o skin, gland, bone, and pulmonary tuberculosis. In Halle there is ten times as much skin tuberculosis as before the war, and in Frankfurt they showed us cases of pulmonary tuberculosis in babies sometimes hardly ever seen in other countries. The course of tuberculosis—or rather, mortality from this disease—in the city of Chemnitz shows clearly the influence of the tightened blockade, for while there is little increase in the first two and a-half years of war, there is a sudden rise in 1917, and a still greater rise in 1918.

Increase of other Diseases.—Probably the increase of tuberculosis is the most serious single result of the food blockade, but there are other diseases also which have shown a startling rise in prevalence and in severity. Among children, rickets, which was formerly almost confined to the very poor or to the inmates of private orphanages, has become wide-spread in every class of society. The softening and bending of the bones is accompanied by an abnormal fragility, so that fractures occur almost spontaneously after the slightest violence. If a child stumbles and falls to the floor he may break a leg or a collar-bone, even a hip; if the mother lifts the child by its arms she may break one of the arm-bones. We saw a three-year-old boy in bed with his second broken leg.

In the orthopædic wards of the Charité 90 per cent. of all the children are rachitic, and even in detention homes and *crèches* and orphanages rickets is now common. Forty per cent. of all the children in the Leipzig home for delicate children are rachitic. We saw innumerable instances of this disease of malnutrition coming on after the first year in children who were fairly normal till they were weaned or till they began to require more fatty and proteid food than could be given them. There were children of two, three, four and even six and seven years who had learned to walk, then gradually lost the ability to as much as stand alone. The orthopædists operate on bowed legs and knock knees and obtain their usual good results, but the food that would make the straightened bones strong is lacking, and so little by little the bending returns, and the surgeon's work is all undone.

Infantile scurvy is frequent, and we saw instances of profound anæmia in tiny children—a very rare thing in most countries. There were children who had been kept on food very poor in iron, war-meal, potatoes and marmalade. One child had only 30 per cent. of red colouring matter in the blood. The war dropsy, of which we read so much, appeared in children who had been kept on a diet of carbohydrates only, and in Berlin it was confined to certain religious orphanages, where it was very prevalent. In one of them all the children, 150 in number, were dropsical. That state of things has been corrected.

We saw many cases of emaciation in children and babies so extreme that it was hard to believe that the condition was caused by hunger alone and not generalised tuberculosis, yet such was the case. In the *crèche* in the industrial town of Neu Kolln, near Berlin, there were 14 babies in one room: 5 were normal, 9 remarkably under-nourished, and of these, 5 were emaciated; none of them were tuberculous. In a Leipzig *crèche*, out of 39 babies, only 11 were normal in development; the remaining 28 showed in varying degree the effects of lack of food, emaciation, rachitis, or both together.

The food blockade was also a soap blockade, and this has had very great influence over certain diseases, notably skin diseases and the fever of child-bed. The lack of soap to cleanse the person of the patient, to wash her linen, and to cleanse the hands of the midwife, is apparently the cause of the sudden rise in the mortality from puerperal fever which has occurred in Germany in the last two years. Children have been the greatest sufferers from the skin diseases resulting from lack of soap, babies of course most of all. The treatment for such a condition is very unsatisfactory, for Germany has absolutely no vegetable oils, no vaseline, or other bland ointment to soften the scales and assist in the healing process. For soap there is still the heavy slab of chalky material which is very irritating to delicate skins, and to wash inflamed eyes there is no absorbent cotton, only tissue paper; the result is that these forms of skin disease in children progress to a dangerous point.

A very serious effect of the lack of soap is the increase of body parasites. In Berlin, we were told, there are now as many as 10,000 houses infested with lice. Typhus is endemic in Berlin since the war, and unless these houses can be rid of lice before the cold weather comes on an epidemic of typhus is inevitable.

THE ÆTIOLOGY, PREVENTION AND NON-OPERATIVE TREATMENT OF ADENOIDS.*

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By "adenoids" I understand a hyperplasia of the pharyngeal tonsil. In many cases, at least, this local hyperplasia is part of a general hyperplasia of the adenoid tissue throughout the body—that condition which, when pronounced, we term the "status lymphaticus." The immediate cause of the hyperplasia is clearly some defect in the plasma bathing the individual cells of the affected adenoid tissue. Cells do not misbehave themselves unless some injurious influence operates upon them from without. What, we have to ask, is the cause of this plasmic defect?

The central factor in the causation of adenoids is intestinal indigestion, due mainly—I do not say entirely—to an excess of imperfectly insalivated starchy food—a condition of things which is traceable to the undue softness of our vegetable food. It is here that the hereditary factor comes in. We know that adenoids tend to run in families; this is chiefly because in these families the bowel has less than the average power of coping with an abundance of carbohydrates.

How does this intestinal indigestion give rise to the plasmic defect referred to? Chiefly, I think, by the absorption of intestinal poisons. The defect is a positive rather than a negative one. Adenoids are as common, or nearly so, in the overgorged, pampered children of the rich as in the comparatively underfed children of the poor. In the former the blood is, if anything, surcharged with foodstuffs. I therefore assume a toxic factor to be in operation—a toxæmia secondary to intestinal indigestion. As a result of this toxæmia the tissues are saturated with poisons and nutrition suffers. In consequence of this the resistance to microbic infection is lowered, especially noticeable in the case of those microbes which give rise to catarrh; there is a pronounced tendency to catarrhs of the nasal passages, nasopharynx, bronchi, intestines, etc. We have, in fact, the condition of things which Dr. Cameron has termed the "status catarrhalis," the clinical equivalent in his view of what is known, post mortem, as the status lymphaticus. The catarrhs are due to invading microbes. These generate toxins, which, when conveyed

* A paper read before the Section for the Study of Disease in Children of the Royal Society of Medicine on January the 24th, 1919.

to the related adenoid tissues, cause the latter to take on hyperplasia. Thus catarrh of the mucous membrane related to the pharyngeal tonsil tends to cause hypertrophy of the latter—*i. e.* adenoids. While I think it probable that the adenoid hyperplasia is mainly caused in this way, we must not lose sight of the possibility that it may likewise be the direct result of the toxic, or otherwise abnormal, condition of the blood already referred to.

An important factor in the causation of adenoids is defective mastication. This may operate injuriously in three different ways:

(1) If the jaws are not adequately used in mastication the nasal passages and nasopharynx fail to develop properly, and it is generally acknowledged that adenoids occur more frequently in those in whom these parts are ill-developed than in others.

(2) Vigorous mastication promotes the flow of blood and lymph in the nasopharynx and related parts, and thus tends to establish a healthy condition of the mucous membrane lining them; defective mastication has the opposite effect. I would remind you of the close relation of the external pterygoid muscles to the nasopharynx.

(3) Defective mastication, implying as it does imperfect salivary digestion, promotes intestinal indigestion.

I will now briefly consider the subject of salivary digestion. Is salivary digestion a minor function or is it an important one? Dr. Sim Wallace considers that salivary digestion is comparatively unimportant; that its essential function is to digest the starch which remains in the mouth after a meal. I suggest that salivary digestion constitutes an important part of the digestive process. Some animals, such as the horse, the ox and the sheep, have no diastasic ferment in the saliva; but books on physiology tell us that in man all the three great salivary glands—the parotid, the submaxillary and sublingual—are endowed with the power of converting starch into dextrins and maltose (*i. e.* the penultimate stage of starch digestion), and it is said that starch digestion goes on for half an hour or even longer in the stomach. I find that the total weight of the salivary glands is much the same as that of the pancreas (as 15 to 16).

Let us now consider some of the changes which have taken place in man's diet since pre-cookery times. Before man learned to cook his food he was compelled to masticate all the coarser varieties of starchy foods thoroughly in order to break up the non-digestible cellulose framework, and thus liberate the contained nutriment. This implied effective salivary digestion. Now in those times the supply of starchy food was comparatively limited; consequently *only a limited quantity of starch entered the bowel, and this not until it had undergone efficient*

salivary digestion. We come next to the early cookery period before the introduction of agriculture. By means of cookery man greatly increased his supply of starch, for the application of heat breaks up cellulose much more rapidly than can be done by mastication. Hence the mechanical function of mastication became less needful and the starch was, in consequence, less insalivated than in pre-cookery days—in short, with the advent of this period more starch entered the bowel, and this in a less digested form. With the introduction of agriculture the amount of available starch came to be enormously increased, and at the present time starchy foods are so carefully prepared that many of them are swallowed after a mere pretence at masticating, and the bowel is in consequence apt to be *flooded with starch which has undergone little, if any, salivary digestion;* thus intestinal indigestion is apt to be set up. Further, the consumption of sugar has of late years increased enormously.

I now ask your attention to the relative frequency of adenoids among different peoples. I suppose most will agree that they are more common among the British than any other people. Sir William Osler thinks there is more mouth-breathing per acre in England than in any other country. Mr. Cheatle found adenoids in nearly half of a thousand school-children examined by him. And observe this remarkable fact: It is not only among the inhabitants of these islands that adenoids are so prevalent. You find a similar prevalency among British communities all over the world—in Australia, New Zealand, South Africa, India, Canada. One of the worst cases I have ever met with was in a child who was brought up on the African veldt, under exactly the same climatic condition as the native negro. This shows that dampness is not a primary factor in causation, though it may doubtless act as a predisposing factor by favouring catarrhs. We can obviously rule out heredity in explanation of the prevalence of adenoids among the British at home and overseas.

It is clear that there must be some specific environmental factor operating in the case of the British all the world over. What is it? The one specific factor operating in the case of the British and not in the case of other peoples has reference to diet. Wherever the Britisher goes he carries with him the dietetic habits of the old country. Inasmuch as there is nothing peculiar about the animal food of the British, the peculiarity must pertain to the vegetable food. What is this peculiarity? It consists in this: that our *vegetable food is for the most part consumed in a form which does not favour adequate mastication.* That the vegetable food of the British is, on

the whole, softer than that of other peoples can be proved beyond doubt. You have only to examine British jaws. Jaws do not develop of themselves: they require exercise in the shape of adequate mastication. Now animal food requires little mastication. The Carnivora do not—cannot in fact—masticate their food. Mastication is a lateral grinding action of the lower teeth against the upper, and the upper and lower teeth of the Carnivora, when opposed, interlock and admit of little lateral movement. The teeth of these animals are adapted for crushing bones and tearing flesh, not for grinding. We may therefore safely conclude that the defective development of the jaws among the British is due to the fact that the vegetable food of the British does not provide adequate mastication. It is true that the Esquimaux, who consume but little vegetable food, have strong jaws, but it has to be remembered that these people consume much of their animal food in a hard, frozen condition. The defective development of the jaws among the British is not always secondary to adenoids—it is common in those who have not suffered from this affection. Its great frequency is shown by the fact that it is very rare to meet with a modern British jaw in which there is sufficient room for a normal eruption of the teeth. On the other hand, the peoples of the European Continent, to go no farther, have, in the main, a well-developed maxillary apparatus.

These considerations would lead us to expect *à priori* that the vegetable food of the British fails to promote adequate mastication. This *à priori* conclusion is confirmed by an actual comparison of their vegetable food with that of other peoples. The chief fault lies with our cereal foods, which are consumed in a spongy, pappy, and pultaceous form. We eat too much spongy (non-crusty) bread and pultaceous pudding, and too little raw vegetable food in the shape of salads and fruit. Of late years we have, moreover, consumed large quantities of sugar.

As a result of this kind of diet the maxillary apparatus (including the nasal passages, nasopharynx and salivary glands) does not develop properly; the local flow of blood and lymph is not adequately stimulated; starchy foods do not undergo adequate salivary digestion; and an excess of wholly non-digested starch (as well as of sugar) passes into the bowel, there to give rise to indigestion and putrefaction (as shown by the malodorous motions). Then follow toxaemia, malnutrition, diminished resistance to infection, catarrh, adenoids.

The central factor is, I repeat, intestinal indigestion. *A sound intestinal digestion—no adenoids.* I do not mean to say that a large amount of starchy food necessarily causes adenoids. This depends

whether or not the bowel can cope with it. Some have a greater capacity in this respect than others. We have, moreover, to take the total dietary into consideration. The Hindus and South African natives consume an abundance of rice and mealies respectively, but their general dietetic customs are such as to promote normal intestinal digestion; and that they are good masticators is shown by their admirable maxillary development. Nor do I wish to contend that there is only one form of intestinal indigestion capable of generating the adenoid habit of body; this may doubtless at times be brought about by a diet in which there is no great excess of starch or sugar.

The most effective way to diminish the prevalence of adenoids in this country is to alter some of our dietetic customs.

Crusty bread should be substituted for the soft spongy article—the class of food typified by the pernicious bun should be banished; puddings should be limited to one or two days in the week, and the quantity of sugar should be kept within reasonable limits. On the other hand, more raw vegetable food should be consumed in the shape of salads and fruit.

ALVEOLAR SARCOMA WITH METASTASES IN THE SKULL.

By Edmund Cautley, M.D., F.R.C.P.,

Senior Physician to the Metropolitan Hospital and the Belgrave Hospital for Children.

This rare case is of interest, as it resembles in many respects the cases of hypernephromata with metastases in the skull, and was, also, somewhat similar to chloroma. The following are the notes and pathological report, for which I am indebted to my House-Physician, Mr. Homi, and the pathologist, Dr. J. Andrews:

Male, aged 2½ years, was sent up to the Metropolitan Hospital as a case of meningitis, and was admitted on February the 4th, 1919. He was said to have been seedy and fretful for three weeks, with loss of appetite, occasional vomiting, constipation, and lying curled up in bed. He screamed at night, and had become very drowsy.

Except for measles and pertussis in the previous year and a chronic otorrhœa secondary to the measles he had had good health.

On admission he looked pale and drowsy, and lay on the right side with his knees drawn up and his hand raised to the left ear. There was slight rigidity of the neck, no ocular signs or fundus

changes, normal knee-jerks, slight *tache cérébrale* and right facial palsy. Temperature, 101·2 F.°; pulse, 124; respirations, 34. Cerebro-spinal fluid was normal. The child soon improved, and was discharged two weeks later, a little pale, and still with some slight facial palsy.

He was brought back and attended as an out-patient on March the 8th on account of increasing weakness and pallor. A differential blood-count (total number, 8000 per c.mm.) yielded percentages of polymorphs 24·25, lymphocytes 70·75, large mononuclears 2·0, eosinophils 1·75, basophils 0·25, myelocytes 1·0, in a count of 400 cells. There were seven normoblasts, two cells showing chromatophilia, marked megalocytosis, and poikilocytosis.

On admission three days later he was very pale and pasty in appearance, still had some facial palsy, and held his head on the left side. The head was peculiar in shape, and presented bilateral temporal bulgings. He was unable to walk.

On account of pain in the legs and X-ray photographs of the hip-joints, which suggested an early bilateral hip disease, he was kept in splints and treated as possibly tuberculous. The anæmia was of the secondary type.

Blood-count on April the 2nd.—Red cells, 2,060,000; hæmoglobin, 36 per cent.; colour index, 0·9; white cells, 9600; polymorphs, 65; lymphocytes, 65; large mononuclears, 3·0; eosinophils, 0·75; basophils, 0·25; myelocytes, 0·75. There were fifteen normoblasts, two cells showing polychromatophilia, marked poikilo-, megalo-, micro-, and aniso-cytosis; no great or important change since the previous count.

Gradually the head got larger, but no definite lumps were noted until towards the end of May, when several nodules about the size of marbles were discovered all over, especially on the vertex. Some of the lumps were hard, others soft and almost fluctuating. Anæmia had increased. Wassermann reaction negative.

A full examination on May the 29th revealed enlarged inguinal glands, hard tumours in the iliac fossæ, and abdominal lumps suggestive of a bilateral enlargement of the kidneys.

Blood-count.—Red cells, 1,690,000; hæmoglobin, 25·5 per cent.; colour index, 0·79; white cells, 14,000; polymorphs, 41·75; lymphocytes 51·0; large mononuclears, 2·25; eosinophils, 1·75; basophils, 0·75; myelocytes, 2·50. Normoblasts, 18; polychromatophilic cells, 17; poikilocytosis, etc., as before.

On June the 13th the note states that all the swellings were increasing in size and developing a somewhat dirty greenish tinge. The left side of the head was more prominent than the right,

and the cervical and submaxillary lymph-nodes were enlarged. The appearance of the head is seen in the photograph. On June the 20th he was shown at a meeting of the Children's Section, Royal Society of Medicine, together with X-ray plates revealing some loss of substance in the vertical and occipital regions of the skull. Two days later he was seized with an attack of abdominal pain and died from collapse. Throughout his illness he had no pressure symptoms,

no loss of consciousness, and no changes in the fundi oculi. Increasing anæmia and debility were the main symptoms, but there was no marked wasting. The coloration was that seen in an extremely chlorotic girl. Some hypertrichosis was present on the upper part of the thighs.

Post-mortem.—The scalp had to be stripped off the epicranial aponeurosis, which was adherent in places. There were numerous breaking-down nodules of growth extending into the soft tissues of the scalp, and bony outgrowths piercing through the epicranial aponeurosis. The swellings, which were pushing up the aponeurosis

but not breaking down, had a somewhat bluish-green colour. Between the outer plate of the cranium and the epicranial aponeurosis there was a uniformly thickened, spongy layer. The skull itself was much thickened. Between the inner plate of the skull and the dura mater there was a similar, uniform, thick layer of growth, soft and breaking down in parts, and the dura mater was also much thickened, but its inner surface was smooth and normal. There was no meningitis or disease of the brain. Cervical and mesenteric glands were enlarged. Small secondary deposits were seen on the surface of the liver and spleen.

In the lumbar region, between the two kidneys and in the middle line, there was a bilateral growth as big as a small orange, firmly adherent to the periosteum of the spine, and compressing the kidneys, more especially the left one. The growth extended along the spinal column downwards and branched off into each iliac fossa, where large nodules were formed in connection with the periosteum. The inguinal glands were enlarged. In colour the growth was dirty blue, and in consistency spongy in parts. Microscopically it proved an alveolar sarcoma.

Diagnosis.—The presence of a tumour in the abdomen and metastases in the skull suggested hypernephroma, and the curious colour of the child was in favour of chloroma. Both types of case are apt to begin with anæmia, or with a tumour of the orbit leading to exophthalmos. Some cases of chloroma are ushered in with facial palsy, present in this patient. Males are more often affected than females in both types. But although the blood picture is not constant in chloroma, it is generally a lymphæmia of large cells, and the disease is sometimes regarded as a tumour of myeloblasts, arising primarily in the bone-marrow and causing metastases. In this patient the blood-picture was one of a secondary anæmia with a reversion of the blood to a more infantile type, as so often occurs in diseases in early life. During life the diagnosis of chloroma was considered uncertain, and the case was looked upon as more likely to be one of hypernephroma with secondary metastases.

A CASE OF CHOREA COMPLICATED BY GANGRENE OF THE FINGERS.

By Hazel H. Chodak, M.D., M.R.C.P.,

Physician to Out-Patients, Royal Waterloo Hospital for Children and Women.

A girl, aged 12 years, was admitted into the Royal Free Hospital on December the 7th, 1918, suffering from chorea of a week's duration. This was a first attack, and there was no previous history of rheumatism; no history of shock or overwork. Two years previously she had had diphtheria, with a bad attack of tonsillitis during convalescence. The mother had had rheumatism, and one sister had had chorea.

On admission the patient, a thin slip of a girl, was found to be suffering from a moderately severe attack of chorea, all parts of the body being affected. There was very little loss of strength on the left side, but the right-hand grip was poor and feebly sustained. All reflexes were exaggerated.

On examination of the heart the apex-beat was found in the fourth space, half-an-inch inside the nipple line. A soft blowing murmur accompanied the first sound at the apex, and was conducted a short way towards the axilla; the second sound was accentuated at the base.

Ten days after admission the right hand began to go white, the finger-nails blue, though the hand did not actually feel cold to the touch. The onset may be described as rapid rather than sudden, and it was fully a week before gangrene of the finger-tips and ball of the thumb had definitely set in. During this time the pallor spread up the forearm. There was no pulse at the wrist, but the brachial artery could be felt pulsating about half-way down the upper arm, and after a time there was distinct pulsation in the superior profunda artery. The pain, which was gradual in onset, became very severe after the first few days, and could only be relieved by morphia.

Meanwhile the cardiac signs showed changes in degree rather than in kind. The systolic murmur became much louder and rougher, while the second sound at the aortic and pulmonary areas was markedly accentuated.

At first the apex-beat remained within the nipple line, but in a few days it was found to be displaced slightly outside the nipple line. The pulse, however, remained at about 80, and was not increased in frequency, except occasionally when the pain had been very severe.

The temperature throughout never rose above 99° F., and was rarely as high as that.

Later still, the brachial pulse slowly disappeared from below upwards and the brachial artery could be felt like a thick cord along the arm.

The little finger recovered, and lines of demarcation gradually formed on the remaining fingers. The ball of the thumb appeared at first to have escaped as the discoloured skin peeled away from it, but it subsequently appeared that there had been damage to the muscles of the thenar eminence, which, followed by contraction of the scar-tissue, led to considerable deformity of the thumb.

The choreic movements subsided rapidly soon after gangrene was established. The heart signs also disappeared, but much more gradually.

A question of interest in this case is the exact cause of the gangrene. The three possible causes of gangrene complicating chorea are: (1) Embolus; (2) arteritis leading to thrombosis; (3) arterial spasm resembling Raynaud's disease. Raynaud's disease is an infrequent complication of acute rheumatism, and may lead to local gangrene, but in this case there was extensive thrombosis, which can hardly have been caused by mere spasm.

As between embolus and thrombosis the diagnosis is not easy. It is impossible to say whether the actual onset was sudden or not: it can only be recorded that the onset of pain was gradual, as the patient did not mention it until it had been present for twenty-four hours and was increasing in severity. The abruptness or otherwise of the onset, however, throws little light on the diagnosis, as there can be no doubt that thrombosis is at times very acute, while on the other hand the results of embolism may be delayed, owing probably to incomplete blockage. On the subject of diagnosis between embolism and thrombosis of the arteries of the extremities, Osler remarks that of recent years less weight has been placed upon the manner of onset as a criterion of the character of the lesion, especially as it has been shown that the onset of symptoms in thrombosis is frequently just as abrupt as in embolism.

It is difficult in this case to feel convinced that there was ever any gross organic lesion of the heart, as the pulse and temperature kept so steady. At the time, however, the dilatation, the character of the murmur and the loud accentuation of the second sound made one believe that this was the onset of a rheumatic carditis. At the time of writing no further signs of cardiac involvement have developed: the heart is of a natural size, and the only abnormality

is a very indistinct soft mitral murmur which cannot be accepted as evidence of organic disease.

There remains the supposition that there was a primary thrombosis in the brachial artery. Arteritis is not an infrequent complication of acute rheumatism, and although this is generally located in the aorta, there seems no reason to suppose that the brachial artery may not be affected also. Such a condition might be speedily followed by thrombosis. In these cases the circulation is usually kept up by anastomosing channels, so that gangrene does not often occur. Probably in this child the general condition of anæmia and debility was a predisposing cause.

In reviewing the literature of the subject no other case of gangrene of the extremities following chorea could be found. Assuming, however, that chorea is a manifestation of rheumatism, a few parallel cases may be recorded.

Barraud, in 1904, published an article dealing with gangrene of the extremities following various infectious diseases, and quoted a collection of 103 cases. The greatest number of these were after typhoid fever; other cases followed typhus, puerperal fever, measles, scarlet fever, diphtheria, influenza, malaria, etc. Only five followed acute rheumatism: two of these were recorded by Goodfellow, one by Jaesche, one by Stein and one by Dörger. All gave evidence of endocarditis, and all but one were fatal. In one of Goodfellow's cases deposits of the same character as those found on the mitral valve were found in various arteries affected intermixed with the clot. Infarcts were also found in spleen and kidneys.

Eichhorst published a number of similar cases, though, unlike Barraud, he does not exclude all possibility of arterio-sclerosis as a factor. His cases also followed infectious diseases, but none of them were after rheumatism.

J. D. Rolleston added to Barraud's post-diphtheritic cases by a further record of nine cases, one of them being his own.

Recently Frascella published a case of embolic gangrene of the left leg in heart disease, probably rheumatic.

It is interesting to notice that in Barraud's record only five out of the total of 103 occurred in the upper extremity—two after typhoid, one after influenza, one after measles and one after whooping-cough. This is strong confirmation of the usual teaching that gangrene is far more likely to occur in the leg than in the arm as a result of arterial obstruction, there being as a rule a sufficiently free lateral anastomosis to carry on adequate circulation in the latter.

The question of embolic or thrombotic origin gives rise to

differences of opinion. It is not always easy to decide the point even in cases which come to autopsy: in those which recover with or without amputation it is often impossible. While Osler points out that arterial embolism is far commoner than thrombosis in the acute stage of endocarditis, Eichhorst asserts that eighteen out of nineteen of his post-influenzal cases were almost certainly due to arterial thrombosis. Barraud, however, does not doubt the embolic origin of all his rheumatic cases but one. Very few points of difference between the two are reliable from a diagnostic point of view. Possibly in the case of arteritis with thrombosis pain along the course of the artery might be complained of. In the case of embolism, evidence of infarcts in other organs should be looked for.

It cannot be assumed that the evidence of endocarditis with vegetations clinches the diagnosis of embolism, especially as it is probable that an embolus is often not a vegetation at all, but a clot which has formed either in the pulmonary veins or in the left auricular appendix. Neither, on the other hand, can embolus be excluded by the absence of definite heart signs. A decision upon this point, if it could be reached, might be of some value, as it has been suggested that in the case of embolism early active massage would help to break up and disperse the obstruction. In the condition of arteritis and thrombosis this treatment could only do harm, and it seems doubtful whether it is ever worth taking the risk.

References.

(1) Barraud.—'Deut. Zeitschr. f. Chirurg.,' 1904, lxxiv, p. 237.
(2) Eichhorst.—'Deut. Arch. f. klin. Med.,' 1901, lxx, p. 519, and 1904, lxxx, p. 75.
(3) Frascella.—'Riv. Osp.' Roma, 1917, vii, pp. 281–286.
(4) Osler and McCrae.—'Syst. Med.,' iv, p. 557.
(5) Rolleston.—British Journal of Children's Diseases, 1910, vii, p. 529.

A CASE OF MULTIPLE EPULIDES.*

By W. Warwick James, F.R.C.S.,

Lecturer on Operative Dental Surgery, and Dental Surgeon, Royal Dental Hospital; late Dental Surgeon, Hospital for Sick Children, Great Ormond Street.

W. B—, a girl, aged 11 years, has suffered from the growth of a fibrous epulis (to be more definite, it is a hypertrophy of the fibrous tissue of the gingival muco-periosteum) associated with each tooth of the temporary and permanent series which has erupted. Removal

* The case was shown at the Section for the Study of Diseases in Children of he Royal Society of Medicine on April the 25th, 1919.

of the growth alone is followed by recurrence, which does not take place when the teeth are also removed. Up to the present all the temporary and eight of the permanent teeth have been extracted.

The history of the case is as follows: The patient was admitted into the Hospital for Sick Children, Great Ormond Street, in May, 1912. Mr. Oswald Addison removed a portion of the tissue for microscopical examination. There was some uncertainty with regard to the nature of the tissue, but a further section showed it to be purely fibromatous. (See report by Dr. Nabarro.)

On examination the gingival margins were seen to be considerably enlarged and nodular. The tissue particularly involved was apparently the gum-margin and the neighbouring portion, but the greater part of that covering the roots was not affected. As the result of treatment it would seem that the periodontal membrane was involved as well as the gum-margin, but this can only have been in the particular part, as there was only slight displacement of the teeth laterally. It has also been found that the bone was not involved; X-ray photographs were taken, which showed no marked changes in the bone.

The growth had extended round the crowns of the teeth, in parts even reaching to the top of the teeth, and also increased in thickness. In the early stages it appeared red, to be markedly vascular, and had a somewhat denuded appearance, but later it appeared to be less vascular, and to be mottled, with faintly yellowish-brown patches. There was no tendency in the tissue to break down except were injured by opposing teeth. The rate of growth was slow, the increase being marked by months rather than weeks. The patient suffered no pain, although her general health seemed to be affected, probably on account of the difficulty she experienced in eating. The growth bears a superficial resemblance to a simple fibrous epulis, but is sessile, while the simple epulis is nearly always pedunculated. The feature of particular interest in the case is the effect of treatment, and this coincides with the records of other cases, and of that of a simple fibrous epulis, it being necessary to remove the teeth involved in order to avoid recurrence.

Seven separate operations have been performed, and an attempt has been made to remove the growth without removing the teeth, but as recurrence followed in due course all the temporary and eight of the permanent ones have been extracted, the growth completely excised, and the margins of the alveolus removed. The stages of the operations were as follows: All the temporary incisors and the first temporary molars were extracted and the growth

removed, whilst the abnormal tissue was cut away freely down to the bone-margin round the remaining eight teeth. Where the teeth remained there was a recurrence of the growth, and in July, 1912, the four molars were removed as being less accessible than the canines, and the tissue again pared away round the latter. In October, 1912, with further recurrence round the canine teeth, they were similarly treated. The child was now nearly five years old. No change took place in the mouth for about two years, nor was there any sign of a similar growth until after the first permanent molars appeared, when the condition recurred in about a year, and it became necessary to repeat the previous operation. In October, 1917, the maxillary incisors had erupted with the recurrence of the condition, and although it was suggested upon the lower incisors, it was not marked. An operation removing the tissue without the teeth was unsuccessful in checking the growth, and the teeth were removed in November.

The present condition shows the lower canines involved, also the left lower second premolar, which is erupting into the socket of the first permanent molar. The same change is taking place with regard to the right upper premolar, which is erupting into the socket of the first permanent molar. The gum presents the reddish somewhat denuded appearance already described, which seems to be the first indication of the presence of the growth, although in parts it is reaching the nodular stage. The patient has been wearing a vulcanite block to provide her with something to bite upon, and it is interesting to note that the pressure from this seems to have arrested the development of the condition in one part. The child has been strong and healthy from birth, with the exception of whooping-cough, and an attack of what the mother describes as "dry eczema," which occurred prior to the appearance of the mouth condition at the age of three years. The patient did not suffer from rickets. She was not nursed for more than a few weeks.

She is not a mouth-breather, a fact of particular interest, as considerable hypertrophy of the gingival tissues is frequently seen in the front part of the mouth in such patients. Such a condition is of an infective nature, and the changes are in marked contrast to those that are seen in the case now shown. In mouth-breathers the swelling of the tissues conforms accurately to the line of contact with the lips, so that when the lips are pulled back there is no hesitation in saying that mouth-breathing exists. In cases of hypertrophy the lips may be apart on account of the bulk of the growth, but it is an effect, not a cause. The condition in this patient

would probably be described as hypertrophy, and although a certain number of cases have been recorded, they are undoubtedly rare. The hypertrophy seen in adults is due generally to chronic infection, and involves the bone as well as the gingival tissue. Perhaps the commonest type is a marked thickening of the bone and the gum in the region of the maxillary molars, although several cases have been recorded where the whole of the alveolar margin has been involved, but the maxilla appears to be affected more often than the mandible in children. Christopher Heath* has described a similar case to the one now reported. Cases mentioned by him occurred at the ages of 8, 2½, 7, 4, and 2 years, the three latter occurring in one family. In all the cases recorded there was a defective mental condition. In another case recorded, which was very similar to the one now shown, the child was aged 4½ years, and healthy. After describing this case he says: "In conclusion, I should say that nothing less than complete removal of the affected alveolus seems to offer any hope of alleviating these cases." As far as I can ascertain, the length of history of this particular case is greater than that of any recorded cases.

As it is difficult to classify these cases definitely, the term epulides is used in its widest sense, but if they were allotted to a definite class it is probable that hypertrophy would be the correct description.

Report by Dr. Nabarro.

From the anatomical and histological points of view the case is not so interesting as from the clinical.

The description of the growth will perhaps be best given in chronological order of its removal:

(1) The first pieces were removed by Mr. Oswald Addison on May the 9th, 1912. Microscopically, the tissue consisted mainly of spindle-shaped cells with some multi-nucleated cells which suggested the diagnosis of a mixed-celled sarcoma, probably a myeloid sarcoma.

(2) On May the 22nd, 1912, several more pieces were removed. Microscopically, these consisted of a tough fibrous material with a smooth surface. On section they were tough and whitish in colour—like a fibrous epulis. Microscopically the sections looked more like a fibroma than those previously examined. No multi-nucleated cells were found.

There was a considerable downgrowth of the epithelium with the

* 'Injuries and Diseases of the Jaws,' p. 229

formation of apparent cell-nests. These and the previous sections were examined by Mr. Shattock, who diagnosed them as fibrous epulis, and said that the case recalled that of the late Mr. Christopher Heath's of very extensive epulis in both jaws.

The tissue was examined for micro-organisms both in sections and by culture. Short-chained streptococci were found in the superficial part of the tumour and these were also obtained in cultures. Doubtless these were due to a secondary infection from the mouth and could not be regarded as being ætiologically connected with the growth.

(3) On July the 10th, 1912, several further small pieces were removed. These again were white, tough and fibrous. Minute fragments of bone were attached to them. Microscopically the sections showed a fibromatous structure as before and very few multi-nucleated cells were present.

There was calcification and bone-formation at one part of the section and cells were present which may have been osteoblasts. At one spot where the epithelium was just growing over it, there was marked infiltration with small round cells.

(4) In October, 1912, more tissue was removed. The section showed fibrillated connective-tissue covered by stratified squamous epithelium. Here and there, there were small hæmorrhages into the tissue. One section showed some striated muscle-fibres. There were no multi-nucleated cells present. The tissue looked altogether more like the normal than did that removed on previous occasions.

(5) On February the 8th, 1917, some growth in the region of the left upper molar tooth was removed by simple excision by Mr. Ovey. Microscopically this was typical of fibrous epulis with hypertrophy and downgrowth of the stratified epithelium. No multi-nucleated cells were seen. There was a little small round-celled infiltration at one spot.

(6) On April the 3rd, 1918, some further tissue was removed. As before, this was tough, fibrous, smooth on the surface and whitish on section. Microscopically the tissue was characteristic of fibrous epulis; no giant-cells were seen. There was proliferation of the epithelium with a few cell-nests. In one place some calcified cartilage (or ? immature bone) was present.

(7) Finally, in October, 1918, the tissue examined showed fibrous tissue covered by proliferating epithelium, and in one place some calcifying cartilage.

On April the 16th, 1919, the blood was tested for the Wassermann reaction with a negative result.

Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, January the 24th, 1919.

The President, Dr. J. Porter Parkinson, *in the Chair*.

A New Case of Lipodystrophia progressiva.—Dr. F. Parkes Weber and Mr. T. H. Gunewardene (*vide* p. 89).

Osteogenesis imperfecta.—Dr. E. Bronson.—Case 1.—A male, full-term infant, aged 6 months. He had had a fracture of the left humerus and the right tibia at birth, and of the right humerus when aged 6 months. No other fractures had been known to occur. He was first seen at the age of one month, when, as now, there was noticeable shortening of the proximal long bones. The shape of the head was entirely normal and symmetrical. Cranial ossification was deficient: a mosaic of bony islands over the occiput and temporo-parietal region. The temporo-parietal suture lay open the width of one's finger. The anterior fontanelle measured 3 in. transversely. During the fourth month the temporo-parietal region began to ossify rapidly, and new membrane could be felt only at one spot above the right ear. At the same time the present bilateral bulging above the ears became noticeable. This bilateral enlargement had increased up to the present, giving the shape of head described by Dr. H. C. Cameron. Ossification over the occiput had not progressed as rapidly as in the temporo-parietal region, and here also there would probably be abnormal protuberance when ossification was completed. Skiagrams showed fractures with abundant callus of both humeri, shortened and somewhat bowed femora, and tibiæ bowed in the lower third. The bowing was due to the crossed-leg position which the infant assumed. The family history was completely negative; both parents and two other children were negative. The Wassermann reaction was negative in both mother and the patient. The sclerotics were not grey-blue, as in several isolated and family cases of bone fragility.

Case 2.—A female child, aged 3 years 10 months, who had had a broken clavicle and right humerus at birth. The mother said she had had fifteen fractures in all, the latest three weeks ago. Most of these had been untreated, with the result of extreme deformity of the long bones. There was considerable hypotonia of the joints, and an underhung jaw. The head showed bilateral but also frontal enlargement, and slight downward rotation of the antero-posterior axis of the eyes. There was no occipital prominence. The sclerotics were not grey-blue. The father, who had died recently of influenza, had had thirty fractures, the first in infancy. He had been unable to get about except in a wheeled chair. No history of blue sclerotics or oto-sclerosis could be obtained. The grandfather was reported to be quite normal. A brother of the patient, aged 8 years, had had no fractures.

Myoclonus multiplex in a Girl, aged 2 years 11 months.—Dr. F. J. Poynton.—About a month previously the child had suddenly started to tremble all over, threw her arms about, cried out, and seemed to be in pain. She became quieter when nursed and settled off to sleep. On attempting to lay her down she became violent, threw herself about and screamed. The parents said that she had been like that for the whole of the last month.

She took her food well and had no difficulty in swallowing. She had to be held while being fed, and seemed terrified to be left without support. Past history: She had been able to walk and talk up to a month ago. She had had no illnesses except whooping-cough, measles and chickenpox, but she was a delicate baby. Family history: Eleven children in the family, all of them healthy. The parents were healthy. Condition on admission, November the 23rd, 1918: Sturdy, plump child, with high colour. All her movements wild and choreiform. Rapid nodding movements of head combined with lateral movements. Eyes in a state of rapid coarse tremor in every direction with dilated pupils reacting to light. Eyelids and mouth twitched incessantly. Respiration jerky and rapid. When held in a standing position the child was unable to keep herself steady and was in a state of generalised coarse tremor. She did not appear to sway in any one direction. She quietened down when nursed; any external stimulus started the choreiform movements again. She made no attempt to speak, other than a cry. She could see, and when reaching out for an object made several attempts before getting hold of it. She ate solid food and swallowed without choking. The head circumference was $17\frac{3}{4}$ in. The respirations were irregular and somewhat stertorous. The pulse was irregular and rapid. Nervous system: The optic discs showed no gross lesion. Knee-jerks increased. Tendo Achillis jerk present. Plantar reflexes variable. Wassermann test: Blood and cerebro-spinal fluid negative. December the 20th, 1918: Symptoms less marked but still present. The movements, when intentional, assumed the coarse tremor. She did not respond to any questions or remarks and made no attempt to speak. Temperature remained normal. General condition unchanged. January the 24th, 1919: Symptoms less marked except for occasional outbursts of increased excitement, lasting for a short period. The diagnosis of the case was obscure. The type of movement as noted early on in the illness with the lack of acute symptoms was suggestive of a myoclonus. The fact that the disease had remained stationary was also in form of a myoclonus rather than an encephalitis.

Case of Pseudo-hypertrophic Muscular Paralysis in a Girl, aged 10 years.—Dr. F. J. Poynton.—Nine years ago the mother noticed that the child dragged the right foot slightly. She had no pain, and was otherwise well. She had no illness except measles. Family history: Seven children; all healthy except the eldest, who had a deformed back, with weakness of legs and left arm. No history of any similar complaint in parents' families. Condition on admission: She walked steadily, but tended to sway from side to side. There was slight lordosis. She could get up from a lying position without any evident difficulty. Muscular system: The calves were large and hard, especially the left. The vasti externi were much enlarged, giving a curved appearance to the thighs. The shoulders were loose. There was wasting of the fibres of the pectoralis major and the latissimus dorsi. The serratus magnus was wasted and caused a tendency to winging of the scapulæ. The deltoids were slightly hypertrophied, the left more than the right. The infraspinati were hypertrophied. The interesting points in the case were the sex, age, and absence of family history.

Friday, February the 28th, 1919.

Multiple Neurofibromatosis (von Recklinghausen's Disease).—Dr. E. Bronson showed a girl, aged 7 years 11 months, who had had the

first pigmented spot about two years ago. Within six months a tumour had started below the right scapula and many more pigmented areas had appeared. During the past year the tumour had increased in size. It measured 4 cm. by 6 cm. and was sessile in type. The skin was dependent on it. Over her chest and abdomen, and to a less extent over her extremities, there were *café-au-lait* coloured patches, irregular in outline, and varying from a few mm. to 3 cm. in diameter. She was 45 in. in height and sluggish in mental development. Her father, who was 5 ft. in height, had had similar pigmented spots and "tiny kernels under the skin" since his earliest recollection.

Case for Diagnosis: ? Xanthelasmoidea (Urticaria pigmentosa).—Dr. E. Bronson.—A male infant, aged $1\frac{1}{2}$ years, had had at birth two brown patches on his right shoulder. These were increasing in size, so an unsuccessful attempt was made to excise them. At his fifth week other similar patches appeared over the body. Since the sixth month no fresh spots had appeared, and recently all had faded somewhat—a few entirely. No urticarial symptoms had ever been present and his general health had been excellent. When first seen at nine months of age he had twenty-eight dark-brown patches scattered asymmetrically over his body, varying in size from 5 mm. to 6 mm. They were irregularly circular, and faded gradually into the surrounding skin. The larger were flatly papular, the smaller macular. The case was not typical of urticaria pigmentosa. Dr. Norman Walker proposed the term "xanthelasmoidea," and no longer classified the condition with the urticarias.

Hypertrichosis in a Mentally Defective Child.—Dr. E. Bronson.—A boy, aged 3 years and 4 months, was brought to hospital when 18 months old for excess of hair on his forehead, neck, shoulders, arms and sacrum. The hair then, as now, measured from 1 in. to 6 in. in length and had been present from birth. He had a negroid nose and a rather dog-shaped face. He cut his teeth easily and normally except that each of his first two molars had a fifth cusp. The fontanelle closed early. Several fits occurred between the fifth and tenth months. He did not say his first word or walk until $2\frac{1}{2}$ years old. He was in mischief and very "clever" many months before he talked. He did not take colds easily and was generally in excellent health. He was put on thyroid treatment when first seen and had been on it until two months ago. He had continued to improve in talking and had continued as active since its cessation. The large tongue and animal-like face had persisted: in fact the thyroid treatment had had no specific effect.

Section from a Case of Tuberculous Meningitis of the Spinal Cord Simulating Anterior Poliomyelitis.—Dr. H. C. Cameron.—A child was admitted to hospital suffering apparently from anterior poliomyelitis involving the lower extremity. The child made a good recovery and three weeks later was about to be discharged, when the temperature rose and tuberculous meningitis slowly developed. Post mortem the cord showed some traces of adherent lymph; there was obvious extensive meningitis of the brain and there were caseous glands at the bifurcation of the bronchi. A section across the lumbar enlargement showed giant-cell systems and foci of caseation among the issuing nerve-roots of the lumbar enlargement. About eighteen months ago Dr. Cameron had seen

a similar case of tuberculous meningitis of the cord preceding by two or three weeks the meningitis of the brain.

Primary Atrophic Muscular Dystrophy (Amyotonia congenita).—Dr. H. C. Cameron.—The patient, a girl, aged 4 years, had previously been shown to the Section in March, 1917 (*vide* British Journal of Children's Diseases, 1917, xiv, p. 194). With some support the child had just learnt to walk, but the condition had deteriorated, the muscles were more flabby, and the amyotonia was more evident than two years ago.

Friday, January the 24th, 1919.

Discussion on the Ætiology, Prevention and Non-operative Treatment of Adenoids.—Dr. Harry Campbell (*vide* p. 140).

Dr. E. Cautley said that operation should not be recommended for mere hypertrophy, but merely for the effects, local or constitutional, produced thereby. The remarkable fact that the obstructive effects of adenoids did not attract the attention of physicians of olden days was possibly due to the affection not being common or pronounced, and to its development coinciding in point of time with the introduction and increasing prevalence of bottle-feeding and of rickets. Although artificial feeding was begun in the eighteenth century, it was very limited in extent until the development of the feeding bottle. Probably many of the ill-effects at present thought due to adenoids must be ascribed to rickets. That did not exclude the hereditary factor as a concomitant cause. Undoubtedly there were families with a "lymphatic constitution," *i. e.* an undue tendency to lymphatic hyperplasia. Almost all children with adenoid hypertrophy were rachitic, but rickets was often present without hypertrophy. Deformity of the jaw in association with adenoids was not due to adenoid hypertrophy at all, but was due to the associated rickets. The main effect of adenoids on the child was an increasing nasal obstruction, leading to mouth-breathing, imperfect respiration and oxygenation, and interference with the functions of the nose and nasopharynx. Nasal obstruction depended on many causes besides adenoids. In the newborn infant the nasal passages and nasopharynx were very narrow; still more so if the nasopharyngeal wall was low and the palate high as in mongolism, cretinism and dolichocephaly. In such cases a normal amount of adenoid tissue might be sufficient to cause nasal obstruction. Or it might be due to congenital nasal stenosis, deflected septum, cicatricial stenosis, new growths or foreign bodies. But the main cause was a post-nasal catarrh, which might be limited to the nasopharynx and give no external evidence of a "cold," decreasing in dry and recurring in wet weather, and often associated with a small, narrow nasopharynx, crowded teeth and receding chin. It was common in the rachitic because of their undue tendency to catarrh, and it was often difficult to decide whether the attacks depended on rickets or on adenoids. Dr. Cautley regarded ear complications, adenitis, deformity of the chest, mouth-breathing, recurrent colds and interference with general nutrition and growth as the effects of adenoids which warranted surgical interference. If they were absent or slight, it was justifiable to rely on simpler measures. But he was sceptical about the possibility of curing or preventing them by sneezing exercises or respiratory drill. Preventive treatment was of great importance. In the first place, breast-feeding should be insisted upon, for adenoids and rickets were much more prevalent and severe among bottle-fed children. Secondly, all

measures for the prevention of rickets and nasal catarrh must be adopted, viz. a suitable diet, hygiene, exercise, fresh air, etc. Thirdly, the child should be guarded as far as possible during the first five years of life from exposure to infectious "colds." The hardening process should be adopted with discretion.

Dr. Sim Wallace said that the exciting cause of adenoids was repeated or prolonged catarrhal infections or inflammations of the naso-pharynx, and that the predisposing cause was a depressed vitality of the mucous membrane of the nasopharynx. Adenoids were much commoner in cold and damp climates, and in climates which were not altogether cold and damp they were common in the cold and damp districts, such as the lake districts of America. On the Continent one of the places where adenoids were most prevalent was Sweden. In Italy adenoids occurred in the north, but were relatively rare in the south. They were not nearly so frequent in Anglo-Indian children as in the British race generally. Dr. Sim Wallace had made statistical inquiries in reference to children who were condemned to sleep in cold and damp atmospheres. Of forty-nine children who slept with the windows open, twenty-two had to be operated on for adenoids, while among sixty-nine who slept with closed windows only two had adenoids. The proper non-operative treatment was to bring up children in such a way that when the temperature dropped quickly as at night, they would be safe-guarded against that drop. When children had contracted a catarrh it was frequently desirable to have an open fire lit in their bedrooms, so that they might be properly ventilated and the humidity reduced and the temperature not allowed to drop too much.

Mr. Stuart Low described the adenoid state as a tendency to a hyperplasion of adenoid tissue of the nasopharynx. Unlike Dr. Campbell he did not think that carbohydrates constituted one of the chief causes of adenoids, as he had operated on a large number of breast-fed children, from whom he had removed very large masses of adenoids. In his opinion toxæmia from improper feeding was not a cause of adenoids, but toxæmia was the result of swallowing septic material and pus generated in the nasopharynx from the presence of adenoids. Defective mastication did not have much to do with the generation of adenoids. He condemned Dr. Cautley's method of trying to induce sneezing in children with the object of preventing or curing adenoids, as the practice brought about engorgement of the upper part of the nasal passages with enlargement of the middle turbinals, which was likely to be fraught with very serious consequences.

Dr. Camac Wilkinson stated that as the result of seventeen years' experience in one of the largest throat hospitals in Australia he did not think that either deficient mastication or intestinal indigestion or rickets were the only factors, though they might favour the condition.

Dr. Eric Pritchard said that the chief function of lymphoid tissue was bactericidal in character. Wherever there was a relatively excessive bacterial invasion there was hyperplasia of lymphatic tissue to meet it. It seemed logical to suggest that there would be hyperplasia of lymphatic tissue under two conditions: First, where normal amounts of lymphatic tissue were unable to perform the bactericidal function, as in the status lymphaticus, the defective power to do its work being due to an excessive carbohydrate diet. The second condition on which hyperplasia of lymphatic tissue depended was that the amount of work was more than normal lymphatic tissue could perform.

The PRESIDENT alluded to a method which he had recommended in 1902 for children suffering from threatened or commencing adenoids, viz. the application of a paint composed of equal parts of glycerine and liq. ferri perchlor. by means of a brush on a metal handle, which could be bent to a suitable angle and passed through the mouth behind the soft palate. This could be done twice weekly at first, and later on once a week as the symptoms abated. Removal of adenoids was not an absolutely safe operation as had been asserted, as he had lost one of his children as the result of such an operation.

Dr. C. P. LAPAGE said that in most instances the cause of adenoids was infection. Anything like intestinal indigestion or rickets which lowered the resistance of the body added to the possibility of infection. He did not consider it right to operate on all cases of adenoids. In many cases if the child was removed from infection and put in a good climate a good result was obtained. If there was deafness or such a succession of colds as to lower the health, he advised operation.

Dr. H. C. CAMERON said that the important point with regard to adenoids was to raise the resistance of the individual against catarrhal infection. The problem was to devise the best possible hygiene for the infant. Crowding together in insanitary houses, with bad ventilation and shut windows, and overclothing were potent causes of infection. The great damage which bottle-feeding did to infants lay in the lowering of resistance to infection.

Friday, February the 28th, 1919.

Dr. IRWIN S. MOORE said that the chronic hypertrophy or hyperplasia of the lymphoid tissue in the nasopharynx known as adenoids was no new disease, for the writings of Meyer and others showed that knowledge of the condition dated back to the earlier part of the sixteenth century, and a reference to it could even be found in Hippocrates. That tended to dispose of the idea that civilisation with its present-day methods of feeding was the chief causative factor in the disease. All were agreed that adenoid hypertrophy was not congenital; the unknown factor of heredity appeared to be the inheritance of a lowered vital resistance that predisposed to an abnormal catarrhal inflammation of the mucous membranes and increase in size of lymphoid follicles all over the body. That inheritance was probably the result of tuberculosis, syphilis, gout, alcoholism, impaired health, or various other diseases in the parents. A lowered vital resistance and an exciting or local cause, such as an attack of catarrh or an infectious fever, were therefore all that was necessary to produce the hypertrophy. Rickets was associated with it in 90 per cent. of the cases. That hypertrophy of the adenoid tonsil was not congenital was shown by the age-incidence. Though the hypertrophy might occur as early as the third month, the usual period was from the third to the fifteenth year, the greatest number of cases occurring between the third and fifth years. Post-mortem examination of 100 infants in a New York Foundling Hospital revealed no instance of hypertrophy of Luschka's tonsil under one year of age. Food and surroundings could have but little influence as exciting causes, for adenoids occurred in the children of both the rich and the poor. An important point in the histology was that the enlargement was a true hyperplasia of Luschka's tonsil, not only of the normal lymphoid tissue, but in many cases of the connective tissue, and that the increase in amount of connective tissue

varied and bore no relation to the age of the patient. The majority of cases of fibrosis occurred in the first decade and not necessarily in older people, and such fibrosed adenoids tended to persist. In seventy-five cases examined microscopically by one authority fibrosis was well marked in thirty, and in that condition the normal glandular tissue had lost all its normal function and could not resist the invasion of bacteria. Atrophy of adenoids, which in some cases occurred at puberty, was not so constant as was formerly supposed, judging by the large number of cases which persisted in later life. It was generally only an apparent shrinkage due to the increased growth in size of the child's nasopharynx, and was not due to atrophy of the hypertrophied tissue itself. The results of neglected adenoids were rickets, defective growth, obstructed respiration, neuroses, and deafness. According to one authority 73 per cent. of children with adenoids had some physical or mental defect and 30 to 40 per cent. had ear disease. From the aural point of view the soft variety of adenoid enlargement was the most serious, as it was more liable to inflammation and suppuration and so might cause otitis media. As regards non-operative treatment, all that the specialist could suggest was to treat the accompanying catarrh. Breathing exercises might be very helpful, but should not be used in cases where the adenoids had become fibrous, as it was then impossible for breathing exercises to disperse them. Moreover, they might exercise a damaging effect on the chest-wall. The majority of neglected hypertrophied adenoids had passed the soft stage and had become fibrous, so that no treatment short of operation could effect a cure.

Mr. H. L. Whale said that mere removal of adenoids did not appear to cure without breathing exercises; it was a common occurrence to see a child so little benefited by the operation that months or weeks afterwards one wondered whether the adenoids had been properly removed. He always pointed out to the mother the importance of making a child a nose-breather. In a few cases adenoids tended to shrink and even disappear at certain ages. On the other hand they might recur even after complete removal if the removal had been carried out at a very early age.

Dr. William Hill said that he had seen infants who appeared to have been born with a good-sized Luschka's tonsil just as some were born with a big nose. In some very young subjects especially there was superadded a condition of nasal catarrh in association with swelling of Luschka's tonsil. The common catarrh of the nose and accessory sinuses was shared by the adjoining area, the post-nasal pharynx and the tonsil. The condition of catarrh was supposed to be a microbic one and to be influenced by climate, but there was a condition of mucous membrane, especially in children, which was influenced less by microbic than by climatic conditions. But the microbic factor had also to be taken into account as an exciting cause of adenoids. The responsibility for enlargement of a Luschka's tonsil which remained permanently enlarged was largely due to acute exanthemata. In the case of enlarged Luschka's tonsil much valuable time was lost, even in very sickly children in whom it was sought to avoid operation, by trying to induce them and the other tonsils to shrink when there was much fibrosis present.

Dr. W. H. Kelson said that a bad case of adenoids could not be treated successfully by medical means, and in the remainder much depended on the relative size of the nasopharynx. If the nasopharynx was large in relation to the adenoids the growths might not do much harm. But there was a third group of cases with small adenoids in which there was some catarrh

set up and possibly other symptoms in a modified way, and in them occasionally benefit occurred from non-operative treatment, such as the use of a nasal wash and residence at school at the seaside.

Dr. H. C. Cameron emphasised the part played by long-continued over-nutrition in the production of an increased vulnerability of the mucous membranes which led to a secondary hypertrophy of adenoid tissue. The adenoid overgrowth was in most cases the result of a general nutritional disturbance carrying with it a lowering of immunity against catarrhal infections of all sorts.

Dr. Eric Pritchard did not agree that it was impossible to teach a baby nasal breathing, which was all that breathing exercises professed to teach. It was one of the simplest things in the world, and the younger the child, the easier it was. It was when an older child had acquired the fixed habit of mouth-breathing that the chief difficulties were encountered. He did not think that owing to climatic conditions adenoids must necessarily develop. Hygiene and feeding conditions generally played an enormous part in adenoid development or otherwise. Hygienically treated children might have some hypertrophy of adenoid tissue, but if they were badly fed their lymphoid tissue broke down and degenerated and their Luschka's and faucial tonsils were unhealthy. The Section did not disagree with the advisability of surgical treatment of adenoids, but wanted to arrive at a means of rendering surgical treatment unnecessary.

Mr. A. R. Colyer said that prevention might be considered under two heads—(1) individual, (2) national. (1) *Individual:* Breast-feeding was the most important factor during the early months of life because of the immunisation conferred by the milk, and because the milk, being a perfect food, tended to promote normal conditions in the alimentary tract. In addition, breast-feeding followed Nature's methods, and brought into play forces which controlled normal development, and so maintained the anatomical relationship of the surrounding parts, the formation of a high arch of the maxilla and a deflected septum thus being avoided. The importance of the thorough mastication of hard foods with the resultant tendency to normal development of the jaws and nasal cavities could not be too strongly emphasised. Mr. Colyer held that food was taken too frequently and that the stomach was not given the physiological rest essential to its well-being. If a considerable quantity of milk was given the other ingredients of the meal should be reduced. As soon as the habit of mouth-breathing was observed in a baby nasal breathing should be restored by closing the mouth gently with the finger, and later in life by mouth shields, used at night when the nasal passages were free from catarrh. When mouth-breathing had become a regular habit, and there was contraction of the arch of the maxilla, the arch could be expanded. A salt douche was most efficacious in the prophylaxis of nasal catarrh. While the nasal cavities were full of fluid, the nose should not be blown lest the germs be drawn into the nasal recesses, but the fluid should be removed by sniffing or mopping. (2) *National:* The question of prevention of adenoids was one of national importance, because a very large proportion of the population suffered either from the presence of adenoids or were handicapped by damage directly or indirectly caused by adenoids.

Friday, March the 28th, 1919.

Congenital Absence of the Lower Portion of the Left Pectoralis Major and Left Mammary Gland.—Dr. E. A. Cockayne.—The patient was a boy, aged 4½ years. His father and mother were unrelated, and had two other children, both of whom were normal. There was no history of a similar condition in the family. The boy was small, but well nourished. The left pectoralis major was absent, with the exception of the clavicular portion and a small part of the sternal portion. The left areola was as large as the right, but the nipple was retracted, and the mammary gland could not be felt. The right mammary gland was palpable. There were no other defects of development. Dr. Cockayne attributed the absence of the mammary gland to a lack of blood-supply.

Two Cases of Undescended Testicle.—Mr. Philip Turner.—These patients together with one adult were all whom he had been able to trace of a series of twelve who had been operated upon for this condition during the summer and autumn of 1914 (*vide* British Journal of Children's Diseases, 1915, xii, p. 13). The chief feature of the operation was that the testicle was transplanted through the scrotal septum to the opposite side. No sutures were needed. In these three cases the end-result was quite satisfactory. An interesting development was an increase in the size of the testicle. Mr. Turner agreed that undescended testicles were usually functionless. The increase in size after the operation would lead one to hope that, if it were done before puberty, the testicle might function normally.

Friday, April the 25th, 1919.

Dr. F. S. Langmead *in the Chair.*

A Case of Multiple Epulides.—Mr. Warwick James (*vide* p. 151).

Aplastic Anæmia.—Dr. J. Porter Parkinson.—Since this child had been previously shown (*vide* British Journal of Children's Diseases, 1919, xvi, p. 1) there had been a further improvement. Red blood-cells, 4,420,000; white blood-cells, 5,400; hæmoglobin, 75 per cent.; colour index, 0·8; polymorphs, 67 per cent.; lymphocytes, 33 per cent.; eosinophils, 1 per cent. The boy had become as sturdy and strong as could be desired.

Dr. Parkinson also exhibited some specimens from a fatal case of the same disease. It was that of a boy, aged 12 years, who had had measles and whooping-cough seven years ago, and scarlet fever two years ago, since when he had been subject to attacks of nose bleeding. He had not had any œdema. After fainting at school he had been kept in bed, and seemed to get paler every day. On admission to hospital he was very anæmic. There was much oral fœtor, and the gums were spongy and bleeding. A small purpuric spot was seen on the left thigh. The liver and spleen were normal in size. There was no albuminuria. The temperature ranged between 100° F. and 99° F. The blood-pressure was 85 and the pulse about 120, small and regular. A few more purpuric spots appeared on the trunk. Blood examination: Red corpuscles, 434,000; leucocytes, 2700; polymorphs, 33 per cent.; lymphocytes, 67 per cent.; no poikilocytes or nucleated red

cells, but a few megalocytes ; hæmoglobin, about 10 per cent. The boy died from syncope before transfusion could be performed. Post-mortem there were œdema and many huge petechiæ on the surface of the heart. Similar petechiæ were found under the mucous membrane of the stomach and colon. The mesenteric glands were enlarged and dark purple from hæmorrhages. The spleen, liver and kidneys appeared to be normal.

Since both patients had suffered from scarlet fever, one eighteen months and the other two years before, and in one this had been said to be followed by renal disease and dropsy, and the other boy was said not to have been well since, an ætiological connection was suggested between scarlet fever and aplastic anæmia. A similar case shown by Dr. Eric Pritchard had also suffered from scarlet fever eighteen months previously. It seemed probable that the poison of scarlet fever inhibited the function of the red bone-marrow and so produced the disease. Its essential feature was that besides the great loss of red cells the polymorphs were much reduced in number, while the lymphocytes, though proportionably increased, were really normal in number.

Friday, June the 20th, 1919.

The President, Dr. Porter Parkinson, *in the Chair*.

Chorea, Complicated by Gangrene of the Fingers.—Dr Hazel Chodak (*vide* p. 148).

Sclerodermia with Calcification in a Mongol.—Dr. F. S. Langmead. —The patient, a boy, aged 4½ years, was the last child of a family of three. The mother was aged 42 years at the child's birth. The other children were aged 17 and 15 years, ten years elapsing between the last gestation and the birth of the patient. The mother said that she had always been healthy except that she had suffered from anæmia. About five years before the birth of the patient she began to suffer from severe menstrual pain and from a foul vaginal discharge. During pregnancy she felt quite well. The father and his family were described as highly strung and nervous. There appeared to be no neuropathic tendency in the mother. No alcoholic history.

The boy was small and appeared healthy at birth, but the mother noticed a similar discoloration and rash to that which was now visible on the knees, face and hands. She was sure that the rash had always been present, but had varied in intensity from time to time. He had always been backward, sitting up at ten months, walking at one year and ten months. Walking had never been properly acquired, but had been feeble, with the legs apart Until the last few weeks he had ceased walking altogether for two and a-half years, and became unable to stand. In October or November, 1917, he was admitted to hospital for "blueness" over the fronts of the upper arms, which had begun to spread to the chest over the pectoral muscles. This apparently improved considerably before his discharge. In December, 1917, he developed pneumonia, but made a good recovery. In June, 1918, lumps began to appear on the surface. At first they were quite soft and limited to the area over the biceps, but about two months later began to harden. More recently they had been noticed to spread inwards over the pectoral region. Flushing of the face varied greatly. It had been noticed for about two years, and was more marked on warm days. The legs had been noticed to be getting thinner for about six months, and about two months ago stiffness of knees and ankles supervened.

The child was a moderately marked example of the Mongolian variety of amentia, but with mental capacity above the average in such cases. The cheeks had a dusky red, patchy appearance, the skin being somewhat atrophic and shiny. A similar blotchy bluish-red discoloration was seen on the fingers and hand as far as the wrists. The fingers were shiny and small but no definite sclerodactylia had developed. The skin on the knees, extending upwards on the outer aspects of the thighs and on the buttocks in the neighbourhood of the ischial tuberosities, was similarly affected. In the arms the discoloration had disappeared, and was replaced by white, firm, contracted skin, thrown into unevenness and puckers by subcutaneous nodules of sizes varying from minute seed-like bodies to plaques larger than a shilling. Some of these were confluent, others discrete. They were roughly linear in distribution and symmetrical, though rather more extensive on the left side than on the right. This condition had spread inwards over the pectorals, and backwards over the triceps on each side. On the left it reached somewhat farther down beyond the elbow, and over the extensor carpi ulnaris muscle. A similar alteration of skin and subcutaneous tissue appeared in a roughly symmetrical manner in other areas, notably on thighs, legs, and in popliteal spaces. Some of the subcutaneous thickened areas were adherent to the skin, others were not. The consistence of some of the nodules was very hard, so that they felt almost like bone. Here and there a nodule had caused redness and soreness of the overlying skin and slight scab-formation. X rays demonstrated that the subcutaneous tissue in the nodular and thickened areas was sprinkled with small pleomorphic calcareous deposits. The muscles did not seem to be affected, but it was questionable whether they were not being gradually infiltrated from the subcutaneous layer. The movements were limited by the inelasticity and fixation of the skin. In addition there was some limitation of movement of the knees and ankles disproportionate to the subcutaneous hardening, probably due to accompanying synovial changes.

The points of interest were:

(1) The discoloration of the skin dating from birth, and later being replaced by sclerodermia.

(2) The calcification of the sclerodermatous subcutaneous tissue (calcinosis, petrifaction).

(3) The associated arthritic changes.

And, with respect to the Mongolism,

(4) The long period of sterility before the child was born.

Apophysitis of Os Calcis.—Mr. Paul Bernard Roth.—This condition had been described by J. Warren Seaver, and his account of it with radiograms of several cases appeared in the 'New York Medical Journal' for May the 18th, 1912. According to him it "is a painful condition of the heel which always occurs in children, characterised by a slight persistent limp, with a marked disinclination to complete the full step in walking. Tenderness is complained of about the posterior aspect of the heel, low down, which has persisted for several weeks or months without change. There may also be a slight amount of pronation of the foot. Examination shows an area moderately tender on pressure, situated over the posterior portion of the os calcis, and localised in front of the tendo Achillis on either side. The motions of the foot are all slightly limited, especially dorsiflexion, and any movement which tends to put a strain on the tendo Achillis causes pain. Radiographically there is to be seen an enlargement of the epiphysis itself

on the affected side both in thickness and in length from top to bottom. There is also considerable cloudiness along the epiphysial line, suggesting a deposit of new bone. Often the condition suggests a slipping of the epiphysis with the customary inflammatory reaction. Similar conditions existing in the tibial tubercle have been spoken of as Schlatter's disease."

The patient was a boy, aged 14 years, who had been suffering for some years with double flat foot. Various methods of treatment had been tried, but he got no better, but seemed to get worse. He could only just walk from his house to the schoolhouse (ten minutes' walk). He had had various arch supports and appliances, thickenings of the soles and heels of his boots, electric baths and massage, but the pain still continued. On examination there was a slight tendency to talipes valgus when he walked; all the pain was at the back of the heel and up the tendo Achillis; there were tender spots on both sides of insertion of tendo Achillis. Mr. Roth considered the case to be one, not of flat foot, but of inflammation from trauma of the posterior epiphysis of os calcis.

Skiagrams showed a cartilaginous gap with irregular ossification between the upper part of the epiphysis and the os calcis, especially marked in the left—the worse—foot, and some rarefaction of the bone at that point. As the radiograms confirmed the diagnosis treatment by prolonged rest in bed was suggested, followed by gradually increasing spells of walking in boots with a rubber disc fixed to each heel, a pad of sponge rubber beneath each heel inside the boot, and a $\frac{1}{4}$-in. valgus wedge of leather applied to the inner side of each sole and heel.

Complete rest in bed for six weeks was followed by some pain, evidently due to stiffness and muscular weakness from his long rest. A month later he was able to walk and even run a few steps without pain.

Skiagrams showed that the wide cartilaginous band with irregular ossification had given place to sound bony tissue through its entire length, except a very small portion at the top (most marked in left foot), where the junction of the epiphysis was not quite complete.

Case of Chloroma.—Dr. Edmund Cautley (*vide* p. 144).

Case of Multiple Glandular Swellings.—Dr. Cautley also showed a case of multiple glandular swellings in a child, aged 1 year and 9 months. There was no family history of tubercle. The patient had been ailing since Christmas with diarrhœa, anorexia and malaise. Enlarged glands were found in the abdomen. Others, large and freely movable, were present in the neck and axillæ, especially in the right. Red corpuscles numbered 6,000,000, white 4800. A differential count was not abnormal. The Wassermann reaction was negative. The diagnosis lay between tuberculosis and lymphadenoma, and Dr. Cautley favoured the latter.

Trophœdema of Leg.—Dr. E. A. Cockayne.—The patient was a boy, aged $8\frac{1}{2}$ years. There was no history of any similar condition in the family. The boy was normal at birth. At one and a-half years there was a swelling, rather soft and lobulated, on the right side in Scarpa's triangle. Three weeks later some swelling of the right leg below the knee was noticed and had increased ever since. When exhibited there was swelling of the whole of the right leg below the gluteal fold. The thigh was soft and the swelling in Scarpa's triangle could no longer be felt; it was 1 in. greater in circumference than the left. The lower part of the leg and dorsum of the foot

were very much swollen; circumference of right calf 13½ in., left calf 9½ in. The leg sometimes pitted on pressure. There was no nævus and no cyanosis. The texture of the skin was normal. X rays showed no difference in the size of the bones. There was no lengthening of the right leg. The right side of the face was a little longer than the left and the right palpebral fissure was wider. The condition caused the child very little inconvenience.

Specimens from Case of Purpura.—Dr. Eric Pritchard.—The child was aged 1 year and 2 months and had been fed on milk; no fruit juice had been given. The father and mother and the other child were healthy. The patient had had pneumonia last December, a burn on neck three weeks ago, and for the last week an ulcerated mouth. On May the 11th a bruise on left leg was noticed; which increased in size very rapidly so that the patient was admitted to hospital on May the 12th.

On admission, temperature 99·4° F. Well-nourished child, extremely pale. Large blue areas over left leg (6 in. by 8½ in.) and thigh (2¾ in. by 3½ in.); also patch on right leg (3 in. by 3½ in.). Petechial hæmorrhages over legs. *Nil* on body or arms. Enlarged gland left side of neck. Discrete glands right side of neck. Nothing abnormal detected in the lungs. Heart normal size; no murmurs. The gums were firm, no ulceration; teeth very discoloured; liver 1 in. below costal margin.

On June the 12th the scrotum was very œdematous. There was a purple patch spreading over the left foot. The child died the same day.

Post-mortem examination.—There was an unhealed ulcer on the left side of the neck due to a burn. It consisted of two areas of about ½ in. diameter each, joined together. There was a subcutaneous hæmorrhage about ¾ in. across on the chin, and another area of about the same size on the right side of the neck. Large subcutaneous dark purple hæmorrhages were seen on both legs. On the right side one hæmorrhage was about 2 in. in diameter over the patella; another large one was situated on the inner side and back of the middle of the leg, and all but joined a third one on the front and outer side just above the ankle. On the left side the lower part of the leg was encircled by a hæmorrhage measuring about 4 in. from above downwards and the epidermis over it was raised as a bulla. Both kidneys with their perirenal fat were the seat of extensive hæmorrhages which were almost entirely cortical. Both testes were dark red from hæmorrhage. The only other hæmorrhage observed was in the middle portion of the thyroid gland. The thymus was a well-marked bilobed structure of ivory white colour. Prepuce œdematous, liver pale, spleen slightly enlarged. Heart, lungs, pericardium, stomach, intestines, pancreas, adrenals, all healthy. Head not examined.

Specimen of Liver Abscess.—Dr. Eric Pritchard.—The patient, a female, was aged 5 weeks, and a full-term, breast-fed child. Father, mother and four children were healthy. Child always vomited after feeds. Vomitus small in amount and occurring at varied times after feeds. Bowels normal. On May the 29th vomiting became more frequent and larger in amount, and was a greenish-yellow colour. Bowels constipated. Admitted May the 30th.

On admission child looking very ill, temperature 101° F., pulse 132, respirations 42. Fairly well nourished. Vomiting bright green material; abdomen distended, soft; no visible peristalsis; no tumour visible; liver and spleen not palpable. Lungs normal; heart normal.

May the 31st: Vomiting after breast and after broth. One test-meal, 6·9 drm.; another test-meal, 6·97 drm. Stomach wash-out, two and three-quarter hours after feed, contained 1 oz. of green, slimy fluid, very acid; size of stomach, 2 oz. Rectal lavage almost clear, not offensive.

June the 1st: Turpentine enema resulted in slight yellow stool; another yellow stool, large amount and undigested, with very slight trace of mucus.

June the 2nd. Temperature 102° F. Child vomited its broth and water. Small green stool passed after turpentine enema, which did not lessen the distension. Subcutaneous saline. Child died.

Post-mortem examination.—Abdomen distended. Peritoneal cavity contained 6 oz.–8 oz. of yellow fluid, and the intestines were loosely matted together by plastic lymph. Umbilicus soundly healed. The umbilical vein (round ligament) ran through a tunnel in the liver substance. When the liver was cut into, the part of the vein within the liver was found to be greatly enlarged and have thick walls so that it measured about ½ in. in diameter. The lumen, however, was almost obliterated, but some greenish pus exuded from it. Gram-negative bacillus obtained from pus. All the organs in the thorax were healthy, as were also the kidneys, stomach and intestines. The hepatic flexure of the large intestine was situated, however, beneath the neck of the gall-bladder, the ascending colon lay close along the right side of the spinal column, the cæcum was situated over the right ilio-sacral articulation, and the appendix lay across the fifth lumbar vertebra. The spleen was rather firmer in consistence than usual. The adrenals were rather large and the right one of reddish hue.

SECTION OF LARYNGOLOGY.

February the 7th, 1919.

Recurring Spheno-choanal Polypus in a Child.—Dr. Irwin Moore showed a girl, aged 8 years, who had been shown at the Section two years previously after removal of a post-nasal polypus (microscopically a soft fibroma) having its origin in the left sphenoidal sinus. The exhibitor had since been able to trace the record of two cases of similar growths in adults, but none during childhood. The patient was again shown after removal of a recurring growth from the same sinus. On the previous occasion the growth had consisted of two polypi (a nasal and a post-nasal portion) attached by separate pedicles to a common stalk which originated in the left sphenoid sinus. On the present occasion the recurring growth consisted of two polypi on separate pedicles, and it had been possible to locate the origin of the pedicle attached to the larger growth to the lower margin of the sphenoidal ostium, the piece of bone attached to the pedicle consisting of a portion of the anterior inferior wall of the sinus. Further research into the literature showed that a total of only nine cases of spheno-choanal polypi had been recorded—all adults between the ages of 20 and 30 years. The case exemplified the common occurrence of antro-choanal polypi in cases in which radical operation upon the antrum was not performed and the polypoid mucosa lining the cavity was not removed.

Case of Long Frænum Linguæ.—Dr. Irwin Moore showed a boy, aged 13 years, with an excessively long frænum linguæ, which enabled him

to roll back and insert the tongue into the post-nasal space. The patient had a large patch of adenoids.

March the 7th, 1919.

Choanal Polypi in Children.—Dr. Douglas Guthrie showed two cases. Case 1 illustrated the rare condition of nasal polypus in children under 10 years of age. Out of 116 cases recorded in literature of nasal polypus under the age of 16 years, only fourteen were found in children under 10 years. The patient, a boy, aged 9 years, had suffered from right-sided nasal obstruction for a year. No discharge, headache or epistaxis. A bluish-grey growth, smooth and elastic, filled the naso-pharynx and blocked the right nasal cavity, projecting downwards below the palate. A skiagram was taken and showed a shadow in the right antral region. Both antra were clear on trans-illumination. The polypus was removed by snaring, and an intra-nasal operation was performed on the right antrum, which contained no pus. There was no sign of recurrence two years later.

Case 2 was that of a choanal polypus which had "herniated" into the *opposite* choana and had there become nipped and strangulated. The patient was a girl, aged 12 years, whose left nasal passage had been blocked for six months. The right side had become obstructed about a month before admission to hospital. Posterior rhinoscopy showed a dark purple swelling in the right choana. Anterior rhinoscopy showed the left nasal cavity to be blocked by polypus. A skiagram showed blurring of both choanæ and of the left antrum. The left antrum was opaque to trans-illumination. On palpating the nasopharynx in order to pass the snare the strangulated lobule became dislodged. A radical operation done on the left antrum showed that the growth arose from the posterior part of the antral floor. On inquiry eighteen months later the child was reported to be well and free from any nasal trouble.

In the subsequent discussion, Mr. Dawson said that a few years ago he had had under his care a child aged 12 years with a large choanal polypus. It filled up the post-nasal space and bulged the soft palate downwards. Under cocaine he succeeded in passing a small blunt steel hook under the middle turbinate so as to engage the pedicle of the polypus. By making traction forwards the pedicle was torn away at its attachment, and the growth with its long stalk fell into the mouth.

Dr. H. J. Banks-Davis stated that in 1908 he had shown a specimen of a large pedunculated nasopharyngeal polypus which he had removed from a boy, aged 9 years, and another specimen from a boy, aged 8 years.

Foreign Body removed from the Nose after Thirteen Years.—Mr. R. A. Worthington.—The patient was a boy, aged 15 years, who had had a fœtid discharge from the right nostril since the age of two. A foreign body—apparently a piece of stick with bark on it—was removed from the right nostril; it was lying in the posterior part of the middle fossa. There was a condition of atrophic rhinitis. The septum was pushed over to the left and the anterior surface of the sphenoid widely exposed to view. The fact that the foreign body was not disintegrated was a great tribute to the antiseptic power of the nasal secretions.

Mr. Mollison remarked that it was extraordinary how rapidly recovery occurred after removal of a foreign body. In the first year of the war a man had been sent to him because he was an offence to his companions

owing to a fœtid smell from his nose. A foreign body which had been there fifteen years was extracted, and two days later the smell had quite gone.

Dr. H. J. Banks-Davis stated that he had shown a case in which a grain of Indian corn was retained in the nose and expelled after fourteen years. No disintegration had occurred.

Abstracts from Current Literature.

Diseases of the Newborn.

The physiological loss of weight in the newborn infant (*'La Pediatria,'* 1917, xxv, *p.* 413).—**A. Borrino** maintains that the physiological loss of weight varies between 100 and 300 grm. and reaches its maximum at the second or third day of life. It is not in relation either with the method of feeding or the degree of development, but solely with the child's weight. A loss of 500 grm. or more or one which persists beyond the fourth day must be suspected as due to abnormal conditions. The physiological loss is in special relation to the great loss of watery vapour from the skin and lungs which for the moment is not compensated, and perhaps also with a transient disturbance of thermogenesis and thermotaxis. In the majority of children at the breast the weight rises rapidly after the third or fourth day and in about half of them reaches the same level as at birth within eight days. Vincent Dickinson.

The Abderhalden reaction during the first month of life (*'La Pediatria,'* 1918, xxvi, *p.* 673).—**G. Caronia** examined all the children at his clinic between the ages of one to thirty days during four years for this reaction, following the original technique, and using as control Schleicher's dialysators. The results showed that in the blood of the newborn there is a constant presence of antiplacental ferments which are in larger quantity the nearer the day of birth, while in infants from twenty-two to thirty days old these ferments are in minimum quantity or altogether absent. This shows that there is a passage of ferments of defence through the placental tissue from the mother to the child, which, however, rapidly gets rid of such substances received passively and not produced by the activity of its own organism, analogous to what is seen in the process of passive immunisation. Vincent Dickinson.

Study of the intestinal contents of newly-born infants (*'Amer. Journ. Dis. Child.,'* 1919, xvii, *p.* 112).—**A. Hymanson** and **M. Kahn** analysed the meconium of five infants voided during the first twenty-four hours of extra-uterine life with the following results: The iron and calcium contents were similar to those obtained in hunger fæces. The phosphorus was less. The sulphur was much increased. Traces of ammonia were found. No uric acid was found in twelve specimens examined. Amylase was found in extremely faint traces. Neither trypsin nor erepsin were found in eight specimens of fresh meconium. No lactase nor lipase was found. J. D. Rolleston.

A case of harlequin fœtus (*'Med. Journ. Austral.,'* 1918, i, *p.* 494).—**W. F. Litchfield** saw the case when the female child was 2 days old.

She was then covered from head to foot with a greatly thickened skin. The girl was shown at the age of 8 years at a medical meeting and was suffering from severe ichthyosis. The baby was treated with white vaseline and lanoline. Most of the cases die in a few days. F. R. B. Atkinson.

Tetanus neonatorum (*'Brit. Med. Journ.,'* 1918, i, *p.* 722).—**H. F. Renton** was called to see a male child, nine days old, who was said to have been crying all day and had not taken the breast. The jaw was locked, there being scarcely half an inch of separation between the jaws. The umbilical scar was sloughing, and from it exuded a moderate amount of thick pus The classical signs of tetanus developed on the following day. A bacteriological examination of the pus from the umbilical scar was negative for the tetanus bacillus. The case terminated fatally. **C. Russ** (*ibid.*, 1918, ii, *p.* 60) reports another fatal case in a male infant. Typical tetanus bacilli were demonstrated in Gram-stained smears from slightly purulent fluid obtained from a broken area of skin at the umbilicus base.

J. Allan.

A case of tetanus neonatorum cured by anti-tetanic serum (*'La med. de los niños,'* 1918, xix, *p.* 157).—**F. M. Arcas.**—An infant on the third day of life developed trismus, and was unable to take the breast. The umbilical cord was found to be tied by an old and dirty boot-lace, and the diagnosis of tetanus was made, which was confirmed by the occurrence of contractures. 10 c.c. or 10,000 units of tentanus antitoxin were given intrathecally, and 75 gr. of chloral hydrate were given by rectum. The same doses of serum and chloral were repeated the following day. During the next eight days 5 c.c. of tetanus antitoxin were given daily, together with the enemata of chloral hydrate. Nasal feeds were given, and the umbilical wound was treated by hydrogen peroxide. Recovery took place three weeks from the onset. J. D. Rolleston.

Birth injuries (*'New York State Journ. Med.,'* 1919, xix, *p.* 50).—**B. C. Hurst** discusses injuries at birth, their effect upon the child and their prevention. The first four weeks of life show the highest mortality, and about 10 per cent. of the deaths are due to immaturity, asphyxia, atelectasis, malformations, injuries and infections. Among the injuries dealt with are brain injuries, injuries to the peripheral nerves, fractures, dislocations, injuries to the bowels, etc. J. Allan.

Hæmorrhage of the newborn; blood transfusion viâ the longitudinal sinus; recovery (*'Journ. Amer. Med. Assoc.,'* 1919, lxxii, *p.* 1615).—**H. Lowenburg.**—Eighty cubic centimetres of whole human blood were transferred from the dura into the longitudinal sinus *viâ* the posterior angle of the anterior fontanelle; 80 c.c. more of blood were injected directly under the skin of the abdomen. For a short time the temperature was somewhat irregular, probably owing to the presence of foreign protein.

J. D. Rolleston.

Cyanosis, icterus and hæmoglobinuria in the newborn (Winckel's disease) (*'Arch. of Ped.,'* 1918, xxxv, *p.* 84.)—**M. Bass** reports a case in a male infant which was apparently quite well till the evening of the seventh day, when the temperature rose to 100° F. The next day general cyanosis developed, which was most marked about the lips, hands and feet. On

those parts where the cyanosis was least intense a distinct jaundice could be seen. The conjunctivæ were yellow. Hæmorrhages were present on the back of the scrotum and buttocks. The spleen was much enlarged, and the liver was two fingers' breadths below the costal margin. The urine was brownish-red, very cloudy, and contained a heavy trace of albumin, broken-down blood-cells and granular casts. The cyanosis became less marked, and the temperature fell to subnormal in the evening. Death, preceded by convulsions, took place the following morning. The symptom-complex of cyanosis, jaundice and hæmoglobinuria in the newborn, which was described by Winckel in 1879, is very rare, only about fifty cases having been recorded up to 1911. The symptoms may come on from the first to the twentieth day of life, oftenest on the fourth. Pathologically the most striking changes are in the kidney. The cortex is swollen and dark, and there may be subcapsular extravasations of blood. The pyramids are the seat of hæmoglobin infarcts. The gastro-intestinal mucosa contains numerous hæmorrhagic areas. The liver shows yellowish areas of fatty degeneration. The spleen is enlarged and hard. The ætiology is obscure. The progress is bad—82 per cent. of Winckel's cases died, the shortest duration of the illness being nine hours. J. D. Rolleston.

Meningitis in the newborn and in early infancy (*'Amer. Journ. Med. Sci.,'* 1918, clvi, *p.* 358).—**M. Barron.**—Although meningitis is quite common in childhood, it is exceedingly rare during the early months of infancy. Barron has found only 39 cases reported in infants under 3 months old, 19 of which were in the newborn. Of the 19 cases 7 were caused by *B. coli*, 6 by staphylococcus and streptococcus, 2 by pneumococcus, and 1 each by meningococcus, *B. mucosus capsulatus*, *B. lactis aërogenes* and *B. pyocyaneus*. *B. coli* is thus as important in the ætiology of meningitis in the early months of infant life as the tubercle bacillus in the ætiology of meningitis of later infancy. The avenues of infection of the newborn have not been definitely established, but infection through the mouth by means of fingers or the accoucheur's instruments must always be borne in mind. Probably some infections occur in the bath through contaminated water, the portals of entry of the bacteria being either through the external auditory meatus, the mucous membrane of the mouth, the Eustachian tubes or the intestinal tract. Barron records a personal case of a male infant who developed right-sided paralysis on the third day. On the tenth day there was bilateral swelling of the eyelids. Several slight convulsions occurred on the eleventh day, when the child died. Post mortem the brain was covered with a purulent exudate most marked over the left parietal region. Cultures from the pus showed *B. coli*. J. D. Rolleston.

Lumbar puncture in meningeal hæmorrhage of the newborn (*'Journ. Amer. Med. Assoc.,'* 1918, lxxi, *p.* 347).—**J. M. Brady** treated three cases of meningeal hæmorrhage in the newborn by lumbar puncture. Two made a complete recovery, and were quite normal when seen at the ages of fourteen months and three years respectively. The third case continued to have convulsions with spasticity of the extremities and died at nine months, when the necropsy showed slight adhesions and flattening over a small area of the right hemisphere. The case doubtless belonged to the supratentorial type, which cannot be relieved by lumbar puncture (*cf.* British Journal of Children's Diseases, 1915, xii, *p.* 53, and 1916, xiii, *p.* 309).

J. D. Rolleston.

Treatment of meningeal hæmorrhages in the newborn by lumbar puncture (*'Gaz. Hebd. des Sci. Méd. de Bordeaux,'* 1919, XL, *p.* 74).—**P. Balard.**—Cases of this kind are relatively rare, as Testus (*'Thèses de Bordeaux,'* 1914–15) could find only 23 cases on record with 15 recoveries. Balard reports a case in which recovery took place after four lumbar punctures, from 1–3 c.c. of blood-stained spinal fluid being removed on each occasion. The puncture should be made through the lumbo-sacral articulation, and the amount of fluid withdrawn should never exceed 6 c.c. The punctures should be repeated several times a day as long as the cyanosis, coma and convulsions persist (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1915, XII, *p.* 52). J. D. ROLLESTON.

Four years' work at an ante-natal clinic (*'Brit. Med. Journ.,'* 1919, I, *p.* 372).—**A. Crook** indicates, not results, but some lines on which future work may profitably be pursued. In the routine work a physical examination was made of all the primiparæ; it included mouth (teeth), throat, neck (thyroid), chest, abdomen (greatest girth), pelvis and limbs (œdema and veins). An examination of the urine was made at least monthly, and the blood-pressure was estimated in many cases. The same routine was followed in multiparæ when previous history or symptoms indicated it. Emphasis is laid on the great importance of pelvic measurements. Some of the abnormal conditions found are noted and discussed. J. ALLAN.

Diseases of Nutrition.

The reaction of the blood in infants suffering from diseases of nutrition (*'Riv. di Clin. Pediat.,'* 1917, XV, *p.* 70).—**G. B. Allaria** records his observations on forty-two children, in whom he estimated the quantity of albumin in the blood-plasma and the alkalinity. The results show that the chemical reaction of the blood of infants suffering from disorders of nutrition was invariably within the limits of neutrality, with a slight tendency towards alkalinity, but never towards acidity. The same reaction was observed in the blood of infants with clinically sound digestive apparatus. VINCENT DICKINSON.

Infantile scurvy (*'Amer. Journ. Dis. Child.,'* 1917, XIV, *p.* 337).—**F. Hess** investigates latent scurvy which is characterised by anæmia, failure to gain in weight, rapid pulse and respiration and tenderness of the long bones. Pasteurised milk was found to be a contributory cause if given twenty-four to forty-eight hours after pasteurisation. Milk ingested by six infants immediately after it had been pasteurised did not produce scorbutic symptoms, while pasteurised milk kept for twenty-four hours and then given to eight infants produced scurvy in two instances. Ageing of the milk may have a good deal to do with this, as one babe developed scurvy after ingesting raw milk kept on ice for forty-eight hours. Milk which has been boiled is less likely to induce scurvy than milk which has been pasteurised. Acidity is not a factor in the production of scurvy as pasteurised milk does not increase in acidity in the first twenty-four hours. The poison causing scurvy is not introduced in the food as it occurs among the rich who take the highest grade milk, and there is no relation between the concentration of the food mixture and its liability to produce scurvy. It is elaborated in the human body, and is an intestinal intoxication

due to the over-growth of harmful bacteria. Disturbances of the bowels are not a constant clinical feature of the disease, and the value of the potato as an anti-scorbutic is not due to its laxative properties. Oliguria is a common symptom of scurvy and is relieved by orange-juice, the amount of urine increasing after its ingestion from 6 to 30 oz. Scurvy is frequently complicated by secondary infections producing furunculosis and pneumonia. In institutions where malnutrition of a scorbutic character exists, secondary infections occur which accentuate the symptoms of scurvy and epidemics of the disease arise. CHRISTOPHER ROLLESTON.

Scurvy in infants (*'Edin. Med. Journ.,'* 1918, i, *p.* 110).—**A. D. Fordyce** records three cases in infants aged 9, 10 and 12 months respectively. In each case there was a history of long-continued use of patent foods. In two of the cases feeding was first attempted by means of cow's milk, discontinued because of digestive trouble, and resort subsequently had to a proprietary food. It is important to recognise early symptoms, and to commence treatment before gross changes have occurred and the baby is emaciated and worn out with prolonged suffering. The dietetic history gives the clue to the diagnosis. If it cannot be elicited, tenderness on movement of a limb in an infant between six months and one year of age should always make us consider the possibility of scurvy. The symptoms of osteomyelitis are more acute; syphilitic epiphysitis occurs at an earlier age. Infantile paralysis is, after the onset, a painless condition. Rickets is a common accompaniment of scurvy, but the tenderness and the paretic symptoms are less marked in rickets and the characteristic vascular changes of scurvy are lacking. Early treatment ensures rapid recovery. When treatment is delayed till the condition is marked, general nutritional weakness favours complications and retards recovery. J. ALLAN.

Infantile scurvy (*'Lancet,'* 1919, i, *p.* 17).—**A. Harden, S. S. Zilva,** and **G. F. Still** record a series of cases in infants to illustrate the value in treatment of the use of the antiscorbutic in lemon-juice separated from the greater part of the inactive components of the foodstuff in which it occurs. This antiscorbutic factor was given in concentration, at least double—in one case seven times—as strong as that in which it occurs naturally in the foodstuff (lemon) from which it was obtained. The treatment was thus, so to speak, "intensive." The result was found to be extremely rapid amelioration of the symptoms. J. ALLAN.

Infantile scurvy (*'Med. Press,'* 1919, i, *p.* 83).—**J. Comby** remarks on the frequency with which this disease is missed. Yet the characteristic symptoms are striking and easy to bear in mind. The following points should be remembered: (1) The affection occurs in quite young children, babies between six and eighteen months of age, brought up on artificial foods, mostly on fixed or homogenised milk, a few on sterilised milk, either at home or at the *crèche.* (2) All scurvy children present in a more or less marked degree painful pseudo-paralysis of the lower limbs, and movement of the leg elicits signs of distress. (3) Some of them display diaphysial swelling affecting the tibia or femur (sub-periosteal hæmatoma). (4) Most of the little patients who have already cut their teeth are seen to have spongy, bleeding gums, and the child's mouth, when it cries, fills with blood. Treatment is generally satisfactory and recovery quickly takes place.

J. ALLAN.

Subacute and latent infantile scurvy (*'Journ. Amer. Med. Assoc.,'* 1917, LXVIII, *p.* 235).—**A. F. Hess** states that an exclusive diet of pasteurised milk will frequently induce scurvy in infants. It should be well understood, however, that this danger can readily be averted by the mere addition of an antiscorbutic food to the dietary. Probably a large proportion of infantile scurvy is occasioned at present by pasteurised milk. This scurvy is usually not of the classic, florid type. It is less pronounced and obvious, and is consequently the form which is least often recognised. This type may be termed "subacute infantile scurvy," and is distinguished by a group of incompletely developed symptoms which disappear quickly when orange-juice or other specific therapy is given. Another type found to be occasioned by this milk is "latent scurvy." This constitutes a state of malnutrition which develops slowly as the result of a negative balance of "vitamins." It can rarely be definitely diagnosed, except by the sharp recession of symptoms—stationary weight, pallor, poor appetite, etc.—following the administration of an antiscorbutic. Infantile scurvy should no longer be regarded as a disorder affecting merely the blood-vessels and the bones. Röntgenograms show that the heart, especially the right side, is frequently enlarged, and that there is a broadening of the shadow at the base of the heart, at the site of the great vessels. Furthermore this disorder is associated frequently, even in the mild forms, with a cardio-respiratory disturbance characterised by a very rapid pulse, and respirations which may rise as high as 60 a minute (polypnœa). Both of these signs disappear promptly when orange-juice or potato is given. This cardio-respiratory syndrome is due to an involvement of the nerves. Considered in conjunction with the changes of the optic disc, and the increase in the knee reflexes, it is evident that the nervous system is extensively involved in infantile scurvy. The fact gains added interest in view of the marked involvement of the nervous tissue in other so-called "deficiency diseases," such as adult scurvy, beri-beri and pellagra. T. R. WHIPHAM.

New features in the diagnosis of scurvy (*'Arch. of Ped.,'* 1915, XXXII *p.* 744).—**A. Brown** says that cases of scurvy, especially those with large extravasations of blood, exhibit high temperatures even up to 105° F., associated with a polymorphonucleosis up to 20,000 in two cases. At the junction of the epiphysis and diaphysis the X-ray plate shows a white line, which appears before any of the cardinal symptoms, and may persist for months after clinical cure. Radiographic plates often fail to exhibit the subperiosteal hæmorrhage, as recently extravasated blood is very radiable. In scurvy there is no alteration in the coagulation time or in the platelet count, but there is increased permeability of the capillary walls, for if the arm be constricted by a blood-pressure cuff minute petechiæ appear below the constriction. Fine petechial spots may be the first symptom. Scorbutic infants usually suffer from one or more of the troubles of the "exudative diathesis," *e. g.* prurigo, eczema, or recurrent bronchitis. Hiss found that the vital activity of the body-cells is not impaired. Schick's test was applied to a series of scorbutic infants, and immune bodies were found to be elaborated; therefore in this disease certain cells, namely the osteoblasts, fail, while the osteoclasts are spared. Proprietary foods, condensed and sterilised milk are the articles of diet most commonly associated with scurvy. Human milk deficient in calcium has produced the disease, but pasteurisation never produces it. In the ordinary rickets and tetany there is retention of sodium and potassium with increased elimination of magnesium and calcium

salts, and in scurvy there is a decrease of calcium and phosphorus in the bones. Heating of milk or antiscorbutic juices precipitate the calcium salts and deprive these foods of their therapeutic properties. If water free from calcium but rich in sodium and potassium salts be withdrawn from the dietary of a scorbutic patient, cure results. CHRISTOPHER ROLLESTON.

Scurvy of guinea-pigs (*'Journ. Biol. Chem.,'* 1918, XXXV, *p.* 487).—**A. F. Hess** and **L. J. Unger** found that scurvy developed in guinea-pigs when the feeding consisted of hay, oats and water. The addition of 1 c.c. of orange-juice caused the disappearance of the scorbutic signs, although the scurvy continued to develop for a short time after the antiscorbutic was given. The addition of cod-liver oil or hard-boiled egg to the hay, oats and water diet did not prevent the onset of the disease. Constipation plays no part in the onset of scurvy, and orange-juice does not act through its laxative properties, as the addition of petrol, a well-known laxative, to the diet of hay and oats does not inhibit the onset of scurvy. Orange-juice, exposed to heat and cold for some time, loses some of its potency as an antiscorbutic. The active antiscorbutic factor in orange-juice can be extracted by alcohol. The residue of this extract, if added to hay, oats and water dietary does not prevent the onset of scurvy. The antiscorbutic factor does not depend upon the presence of salts, as artificial orange-juice, consisting of sucrose, citric acid and various salts, does not show any curative properties. The antiscorbutic factor is contained in the peel of an orange, and even on drying retains considerable power, as animals fed on desiccated orange-peel did not develop the disease until after fifty days. Prunes absolutely failed. Dehydrated vegetables, *e. g.* carrots, such as are supplied to armies, did not prevent the onset of the disease, while fresh carrots caused instant cessation of the ailment. The onion and the cabbage possess the greatest anti-scorbutic power. CHRISTOPHER ROLLESTON.

Chemistry of the blood in scurvy (*'Proc. Soc. Exp. Biol. and Med.,'* 1918, XVI, *p.* 43.)—**A. F. Hess** and **J. A. Killian** ascertained the urea content, CO_2 combining power, percentage of sugar, diastatic activity and calcium content of the blood in a number of cases of infantile scurvy. Two abnormal variations were found: (*a*) a moderate acidosis, figures under 40 or 45 being obtained according to the Van Slyke method; (*b*) a deficiency of calcium. Neither appeared to be a basic factor, nor to run a course parallel to the scorbutic process. J. D. ROLLESTON.

Focal degeneration of the lumbar cord in a case of infantile scurvy (*'Journ. Inf. Dis.,'* 1918, XXIII, *p.* 438.)—**A. F. Hess.**—The patient was a female infant, aged 18 months, who had been fed on pasteurised milk and cereal gruels. The changes in the lumbar cord were not the result of poliomyelitis, not only on account of the non-inflammatory nature of the lesion, but also because the child had never shown any symptoms of the disease nor been exposed to infection. Whether the lesions were scorbutic in nature could only be decided by an examination of future cases.
J. D. ROLLESTON.

Canned tomatoes as an antiscorbutic (*'Proc. Soc. Exp. Biol. and Med.,'* 1918, XVI, *p.* 1.)—**A. F. Hess** and **L. T. Unger,** having found that 5 c.c. of canned tomatoes added to a diet of hay, oats and water was sufficient to protect a guinea-pig from scurvy, gave canned tomatoes to

infants who were receiving pasteurised milk, in place of orange-juice, which had become increasingly expensive. The amount given to babies aged 3 months or more was 15 c.c., half this quantity being given daily to younger infants. The tomatoes were uniformly well tolerated by babies as young as one or two months of age throughout the summer months, and the writers therefore recommend this foodstuff as an economical and efficient anti-scorbutic. J. D. Rolleston.

Antiscorbutic value of the raw juices of root vegetables (*'Lancet,'* 1918, II, *p.* 774).—**H. Chick** and **M. Rhodes** experimentally investigated the antiscorbutic value of the raw juices of root vegetables with a view to their adoption as an adjunct to the dietary of infants. They comment on the low antiscorbutic property of fresh cow's milk, which is further reduced by heating or drying. It is therefore advisable to provide some extra antiscorbutic material in the diet of infants nourished upon heated or dried cow's milk. Among fresh fruit-juices that of the orange is easily the most suitable and possesses a value about ten times as great as that of fresh grapes. Of raw vegetable-juices, raw swede-juice was the most potent, approximating in value to raw orange-juice. J. Allan.

Experimental investigation on rickets (*'Lancet,'* 1919, I, *p.* 407).—**E. Mellanby**.—Puppies were the subjects of four experimental dietaries. Diet 1 consisted of 175 c.c. of whole milk with oatmeal rice and 1 to 2 gr. of NaCl. This diet produced a rachitic puppy, but the addition of 325 c.c. of milk prevented the onset of the disease. Diet 2 consisted of 175 c.c. of whole milk and bread *ad lib.* Again rickets was produced. The disease was prevented by the addition of meat and watery and alcoholic extracts of meat. On the other hand, the protein residue of meat after loss of extractives allowed rickets to develop. The addition of yeast had no protective influence. Malt extract has some inhibitory action and delays the onset of rickets. The influence of fats was investigated. All of them with the exception of linseed oil are effective. Cod-liver oil is the best; olive oil and arachnis are not so good as butter. The addition of a quarter of an orange daily and 5 gr. of calcium phosphate to diet 2 was a failure. Diet 3 consisted of 175 c.c. of separated milk, bread (70 per cent. wheaten flour) *ad lib.*, linseed oil 10 c.c., yeast 10 gr., and NaCl 1 to 2 gr. The addition of meat and meat extract did not prevent the onset of rickets, but to some extent prevented its intensity. From these results the author concludes that rickets is a disease depending upon deficiency in the diet of certain accessory food factors. As yeast and orange-juice have no influence, water-soluble B and the antiscorbutic factor cannot be of importance. On the other hand, the anti-rachitic substances are those in which the fat-soluble A is present. Rickets, however, develops best in rapidly-growing animals. Rapid growth is said to depend upon the presence of fat-soluble A; but this is probably incorrect, and it would be better to say that fat-soluble A is concerned with correct growth. Again, meat has little fat-soluble A, yet it has a definitely inhibitory action on rickets. Probably meat acts by metabolising fat-soluble A already existent in the tissues. Confinement alone does not produce rickets. Exercise stimulates the metabolism of anti-rachitic factors stored in the tissues. In practice the supply of bread to infants should be limited. No vegetable fats or margarines should be given, but milk fat is the natural diet. Fat-soluble A is derived from the grass eaten by the cows. The mother drinks this milk and derives

fat-soluble A from it. She does not synthesise it. Cows fed on vegetable oil produce a milk defective in fat-soluble A, and this is the reason why rickets may develop in breast-fed children, and why rickets develops more frequently in winter when cows are stall-fed.

CHRISTOPHER ROLLESTON.

Observations on the cause of rickets (*'Brit. Med. Journ.,'* 1918, II, *p.* 625).—**C. Noel Paton, L. Findlay,** and **A. Watson** as a result of an experimental research found that pups kept in the country and freely exercised in the open air, although they had actually a smaller amount of milk-fat than those kept in the laboratory, remained free from rickets, while the animals kept in the laboratory all became rickety. They think that the observations seem to show that some other factor than diet is the prime cause of rickets in dogs, and afford no evidence that milk-fat (butter) contains any accessory factor protecting against the development of rickets.

J. ALLAN.

The prevalence of rickets at Palermo (*'La Pediatria,'* 1916, XXIV, *p.* 152).—**S. Maggiore** found the greater number of cases in the town itself; severe forms were found only in a small number of cases and in those fed artificially from birth. Cure occurred before the end of the second year. A few severe cases occurring in those entirely breast-fed show the influence of a rachitic or syphilitic taint. There was a noteworthy predominance of males. Neither tuberculin reactions nor a positive Wassermann reaction were frequent in rachitic children. With regard to heredity, especially in severe forms, a similar heredity had great influence and syphilitic heredity was very frequent. If not a pure coincidence, alcoholism in the parents was also found in a considerable number of cases.

VINCENT DICKINSON.

Rickets in relation to housing (*'Glasg. Med. Journ.,'* 1918, I, *p.* 268).—**L. Findlay** during the past three years carried out an extensive research into the conditions, dietetic, hygienic, etc., of actively rachitic and non-rachitic children belonging to the same social class. The most important factors, in order of significance, were: (*a*) Improper housing; (*b*) absence of facilities for open-air life; (*c*) imperfect parental care. It was found that the rachitic families did not spend as much on rent as the non-rachitic families and they would thus be supplied with inferior houses. The frequency of rickets was directly proportionate to the air-space in the house available per person and also to the opportunities of open-air exercise. An interesting comparison is drawn between conditions in Port Sunlight and in Glasgow. The author thinks that the want of care on the mother's part is usually not due to indifference to her responsibilities, but simply to the fact that as a result of her unfavourable surroundings she has lost all nterest in life and the vitality to contend against them. J. ALLAN.

Cod-liver oil for rickety children (*'Med. Off.,'* 1918, I, *p.* 47).—**G. A. Brown** states that the administration of cod-liver oil is an essential and powerful factor in the treatment of these cases. From his observations of the improvement in the general nutrition of rickety children after a course of cod-liver oil, judiciously administered over a long period, he is convinced that the oil is one of our most powerful allies in combating the effects of this wide-spread disease. At the same time excellent food and the good hygienic conditions of special schools play an important *rôle* in the treatment of the disease. J. ALLAN.

Diseases of the Liver and Peritoneum.

Congenital unilocular cyst of the liver (hæmangioma) (*'Arch. of Ped.,'* 1918, xxxv, *p.* 285).—**H. Lowenburg** reviews the literature, and records a case in a male child, aged 19 months. The abdomen was enormously distended. A large firm mass occupied almost the entire abdomen, and seemed to spring from the right side, corresponding to the normal situation of the liver. The lower edge was firm and extended to the brim of the pelvis. On exploration a large tumour in the liver was found and first tapped and then incised, a large amount of bloody fluid being evacuated. Tremendous drainage of serum took place from the cyst-well, and the child became extremely anæmic and died a few days later. There were no other congenital anomalies present. J. D. Rolleston.

Primary carcinoma of the liver with report of a case in childhood (*'Amer. Journ. Obst.,'* 1917, lxxvi, *p.* 862).—**J. Forman** and **J. S. Hattery** report a case in a boy, aged 3 years, who had suffered for a year from attacks of abdominal distension and pain. Three weeks before death he fell and received a blow on the upper abdomen. The accident was promptly followed by abdominal pain, distension, jaundice, and a temperature of 101° F., accompanied by vomiting. There was at this time œdema of the extremities. The jaundice persisted throughout the last three weeks of life, and there was a loss of 20 lb. during this time. Necropsy: Liver greatly enlarged, with uneven nodular surface; cut surface filled with similar nodules, some of which showed degenerated centres. Microscopically the nodules consisted of epithelial cells, which were mostly sphenoidal or polyhedral in shape. Blood-tinged fluid in left pleural cavity; clear fluid in the abdominal cavity; spleen slightly enlarged; gall-bladder distended owing to stenosis of common bile-duct; enlargement of mesenteric lymph-nodes. J. D. Rolleston.

Primary cancer of the liver in a girl, aged 6 years (*'Arch. de méd. des enf.,'* 1917, xx, *p.* 472).—**Mlle. de Saussine, Androutsellis** and **I. Bertrand.**—Five months before admission the child was seized with violent abdominal pain, chiefly on the right side. Since then she had been tired and restless, but had had no localised pain until a week before admission, when she again began to suffer from abdominal pain on the right side and became constipated. A diagnosis of hepatic abscess was made, and two exploratory operations were made at two days' interval. Death took place six days after the second operation. Post mortem the liver was much enlarged and weighed 2·100 kg., and presented a whitish tumour with areas of softening occupying all the right lobe. Microscopical examination showed it to be an epithelioma. No metastases were found in the glands surrounding the bile-ducts. J. D. Rolleston.

Abscess of the liver (*'La Pediatria,'* 1917, xxv, *p.* 129).—**R. Jemma** describes the case of a boy, aged 8 years, whose illness commenced suddenly two months previously with intractable vomiting, severe abdominal pain, rigors and fever. Five or six ascarides were then expelled, but the pain and fever persisted and œdema of the legs appeared. The hepatic region was protruding, the ribs pushed out, and the intercostal spaces widened, the lower margin of the liver being felt two fingers' breadths below the umbilicus. In consistence it was hard, except that portion corresponding to the epigastric

region, which was soft and almost fluctuating. The spleen was felt a finger's breadth below the costal margin. White corpuscles 15,600, with 81 per cent. of polymorphs, 11 per cent. lymphocytes, 1 per cent. eosinophils. Serum diagnosis for typhoid, paratyphoid and *B. melitensis* negative. Wassermann and Noguchi negative in child, positive in father. Cutireaction to tuberculin slightly positive. A needle introduced into the soft portion in the epigastrium drew off 10 c.c. of purulent bile-stained fluid. The case recovered after operation and subsequent mercurial treatment, but the pathology of the abscess remains obscure. VINCENT DICKINSON.

Infantile syphilis of the liver (*'Arch. of Ped.,'* 1917, xxxiv, *p.* 927).—**C. L. Bauer** records a case in a male infant, aged 11 months, in whom there was an exclusive infection of the liver with no other evidence of the disease. Death took place within four weeks. Late jaundice and ascites were well marked. The autopsy showed diffuse hepatitis, with intra-lobular sclerotic atrophy, passive congestion of the kidneys, and myocardial degeneration. No other lesions were found. J. D. ROLLESTON.

Familial cirrhosis of the liver (*'Edin. Med. Journ.,'* 1916, ii, *p.* 90).—**Byron Bramwell** records four cases of acute fatal cirrhosis of the liver in the same family, the patients being respectively nine, ten, fourteen and fourteen years of age. All the cases presented the same general symptoms—rise in temperature, jaundice and ascites. Death took place in the course of three or four weeks. It was possible to exclude alcohol and syphilis. It is suggested that it is closely related to Wilson's progressive degeneration of the lenticular nucleus. J. ALLAN.

Pneumococcic peritonitis in childhood (*'New York Med. Journ.,'* 1917, cv, *p.* 769).—**I. A. Abt** describes a primary or idiopathic form, and a secondary one as a rule following pleuro-pneumonia or otitis media. In the primary form the infection may be by the blood and lymph or by penetration of the coats of the bowel, the pneumococci having been demonstrated in the bowel contents, and even passing through necrosed Peyer's patches, though the healthy mucous membrane is impenetrable by the organism. Clinically it may be localised or diffuse. In the localised variety the infection sets in acutely, but soon becomes chronic; the pus becomes encapsulated and the symptoms are mild. It begins with abdominal pain, vomiting and fœtid diarrhœa. The vomiting soon ceases, but the fever persists. After ten to fourteen days the symptoms become more severe, and the abdominal pains are localised in the hypogastrium, where there is fulness, dulness and fluctuation. The abscess, if not opened, may rupture through the umbilicus or bladder or rectum. It may simulate tuberculous peritonitis or typhoid fever, but the leucocyte count is usually high. The primary diffuse peritonitis is characterised by severe and rapid prostration, delirium and high fever. Abt discusses four cases, all in females. They all began with vomiting and high fever, with severe abdominal pain; often diarrhœa alternating with constipation. One case had general pneumococcic septicæmia, with lesions of the lungs, pleuræ, heart, and kidneys. The other three had peritonitis only. The early severe symptoms decrease on the second or third day and the abdomen becomes less distended, and localised collections of pus may be made out which tend to point outwardly. The diffuse form tends to run a severe and often fatal course. It begins acutely with high fever, severe abdominal pain, severe diarrhœa and vomiting. There is marked leucocy-

tosis. The pulse is small, irregular and rapid. The abdomen becomes more and more distended, and there may be dulness in the flanks. Muscular rigidity may be absent. The diagnosis from appendicitis is often very difficult in the absence of pneumococcal disease in some other part of the body. The prognosis in the diffuse form is bad, but is relatively good in the circumscribed form. The treatment is to put the patient in Fowler's position, and when the process is definitely localised, incision and drainage.

J. Porter Parkinson.

Acute Poliomyelitis.

The tonsils as an atrium of infection in poliomyelitis (*'Ann. of Otol.,'* 1917, xxvi, *p.* 98).—**E. M. Seydell.**—In the 203 cases studied, tonsils were present in 200. In three cases there was a partial absence of these structures, and in these cases the paralyses were slight and recovery rapid. Rosenow, in a communication to the author, stated: "I know of two cases that have developed poliomyelitis in whom tonsils and adenoids were presumably properly removed. In one there was only a slight weakness of the shoulder muscles, which disappeared promptly. In the other case the paralysis was slight, even though a brother of the patient whose tonsils had been removed was severely paralysed. I have seen these two cases and have heard of others, and I believe in all cases the paralysis was not marked.

Macleod Yearsley.

Poliomyelitis (*'Journ. Amer. Med. Assoc.,'* 1917, lxix, *p.* 167).—**H. L. K. Shaw** concludes from a study of the recent epidemic in New York State that poliomyelitis is transmitted by contact with a patient or a carrier; that the period of incubation averages seven days, and that three weeks is a sufficient period to hold a patient with poliomyelitis in quarantine.

T. Whipham.

Does the spinal fluid from human poliomyelitis contain the specific infective agent? (*'Journ. Amer. Med. Assoc.,'* 1917, lxviii, *p.* 546).—**H. L. Abramson** has made cultures from over 1200 specimens of cerebro-spinal fluid obtained from patients in the early or preparalytic stage of the disease during the epidemic in New York. In all instances the cultures were sterile, and inoculation of the sediments into a monkey caused no symptoms. The author, therefore, concludes that there is little if any virus present in the cerebro-spinal fluid in the early stages of the disease.

T. R. Whipham.

Milk-borne poliomyelitis (*'New York State Journ. Med.,'* 1916, xvi, *p.* 589).—**J. Dingman** gives an account of an epidemic of infantile paralysis in which he considers that milk was possibly the means of conveying infection.

J. Allan.

Acute poliomyelitis (*'Journ. Amer. Med. Assoc.,'* 1917, lxix, *p.* 163).—**C. Herrman** states that the epidemic of poliomyelitis which occurred in New York City in 1916 was the largest recorded. Nearly 9000 cases were reported. Infants and young children are especially susceptible. Young infants are less frequently attacked, because less exposed to infection. A large proportion of patients under five years of age does not indicate a mild epidemic. The same increased susceptibility of the central nervous system

is seen in the age-incidence of tuberculous meningitis. In temperate climates epidemics occur during the summer months, but sporadic cases occur throughout the year. In Scandinavia epidemics have extended into the winter months. Meteorological conditions do not play the most important *rôle* in the spread of the disease. Seasonal changes in the power of the nasopharyngeal mucous membrane to neutralise or inactivate the virus of poliomyelitis may account for the increased susceptibility. Patients who have had poliomyelitis seem to be more susceptible to the ordinary nasopharyngeal infections. The susceptibility of children under 13 years of age to poliomyelitis is much less than to the other communicable diseases of childhood. It is present in only about 2 per cent. There exists a distinct individual predisposition or susceptibility. A future epidemic could be controlled if the 2 per cent. of susceptible children could be detected and could be immunised against the disease with convalescent serum.

T. R. Whipham.

Acute poliomyelitis in an infant (*'Lancet,'* 1918, II, *p.* 847).—**T. H. Gunewardene** reports a case in a baby, aged 12 days. External paralyses were noted. Examination of the cerebro-spinal fluid supported the diagnosis. Gradual recovery took place. Treatment consisted in the administration of urotropine in 2-gr. doses by the mouth and in the subcutaneous injection of small doses of atropine and strychnine during the earlier weeks.

J. Allan.

The encephalitic fever of acute poliomyelitis (*'Med. Journ. Austral.,'* 1918, I, *p.* 413).—**C. T. Stephen.**—A child, aged $2\frac{1}{2}$ years, was in perfect health and playing when she suddenly fell down in a fit. The child became comatose, the left arm and leg presented a flaccid paralysis, and clonic movements of the right arm and leg and face at intervals of about three seconds occurred. These continued until death sixteen hours afterwards.

F. R. B. Atkinson.

Unusual localisation in infantile paralysis (*'La Pediatria,'* 1917, XXV, *p.* 270).—**U. Provinciali** describes two cases: (1) A girl, aged $2\frac{1}{2}$ years, with paralysis and flaccidity of the whole of the lower trunk with atrophy and abolition of the knee-jerk. Movement was preserved in toes of right foot and absent in left. The paralysis extended partly and in a less degree to the upper limbs. On putting the patient in a sitting posture with the arms forward there was a right dorsal scoliosis, while in the left flank a hollow was noticed. During expiration the abdominal walls on the right side bulged out like a hernia. (2) A girl, aged 2 years, with marked atrophy and paralysis of the right leg, with equino-varus position of foot and absence of knee-jerk. On crying a pseudo-hernial protrusion on the right abdominal wall was seen.

Vincent Dickinson.

The cerebro-spinal fluid in acute anterior poliomyelitis, with special reference to diagnosis (*'Arch. of Ped.,'* 1917, XXXIV, *p.* 413).—**J. A. Kolmer.**—A clear or slightly opalescent fluid under increased pressure, poor in fibrin, reducing Fehling's solution, and containing an increased number of cells, chiefly of the lymphocyte variety, are the most constant findings. An increase of protein and a high potassium permanganate reduction index strengthen the diagnosis, while a gold chloride reaction of the meningitic zone type and the presence of natural sheep hæmolysin are helpful diagnostic data.

J. D. Rolleston.

The cerebro-spinal fluid in anterior poliomyelitis: report on 108 cases (*'Boston Med. and Surg. Journ.,'* 1917, CLXXVII, *p.* 480).—**W. Oberholser.**—In the early post-paralytic state the spinal fluid usually shows a moderate lymphocytosis and a slight to moderate increase in pressure and in globulin content. Fehling's solution is reduced, but this has little diagnostic value. A reasonably constant curve is yielded by Lange's colloidal gold test; this curve has some diagnostic value. The picture is only fairly constant, and in the absence of clinical findings does not justify the diagnosis.
J. D. ROLLESTON.

The colloidal gold reaction of the cerebro-spinal fluid in acute poliomyelitis (*'Journ. Amer. Med. Assoc.,'* 1917, LXVIII, *p.* 752).—**LI. D. Felton** and **K. F. Maxcy** find that in the acute stage of poliomyelitis the spinal fluid reacts with colloidal gold in dilutions of from 1 : 40 to 1 : 160, producing a maximal decoloration of 3 ("blue"). In the second and third weeks the reaction is practically the same as in the acute stage, with a tendency to clear up in some cases and a precipitation in the higher dilutions in others. There is no constant rule. In the fourth to the eighth week the colloidal gold reaction runs practically to the globulin-albumin content, persisting in some cases to the eighth week and beyond, but still occurring in dilutions of from 1 : 40 to 1 : 160. As the spinal fluid in acute poliomyelitis reacts constantly in the same zone, the gold chloride reaction is helpful in the diagnosis of this disease. It is advisable to use the following nomenclature in reading the reactions of Lange's colloidal gold test: (*a*) Zone 1 (or paretic zone), maximum precipitation from 1 : 10 to 1 : 160, with complete decolorisation. (*b*) Zone 2, maximum precipitation from 1 : 40 to 1 : 160, with decolorisation up to 4 (light blue). (*c*) Zone 3, maximum precipitation beyond 1 : 160. T. R. WHIPHAM.

The diagnosis of unparalysed cases of acute poliomyelitis (*'New York State Journ. Med.,'* 1917, XVII, *p.* 274).—**A. Bowen** calls attention to the fact that paralysis is only an incident occurring in a certain percentage of poliomyelitis infections, and apparently the only sequel of the disease. A majority of all cases never develop paralysis. It is difficult to distinguish poliomyelitis from other general infections before meningeal symptoms develop. In time of epidemic any temperature, especially if accompanied by vomiting, constipation, headache, stiff neck, painful spine or hyperæsthesia should be tentatively diagnosed as poliomyelitis and the diagnosis established by one or more lumbar punctures. Lumbar puncture with chemical and microscopic examination of the spinal fluid, considered in connection with the history and clinical findings, enables one to make a differential diagnosis in practically every case. Control of infection and successful serum treatment depend on the earliest possible diagnosis. J. ALLAN.

The production of an anti-poliomyelitis serum in horses (*'Journ. Amer. Med. Assoc.,'* 1917, LXIX, p. 261).—**E. C. Rosenow** as the result of experiments found that the serum of horses immunised with aërobic cultures of the pleomorphic streptococcus from both poliomyelitis in man and experimental poliomyelitis in the monkey developed specific antibodies, agglutinins and complement-deviating properties, the agglutinins appearing to be present in large amount because serums cross-agglutinate these strains specifically in very high dilutions. The serum of patients and monkeys which have recovered from attacks of poliomyelitis cross-agglutinates specifically many, but not all, of these strains in the lower dilutions. It is of great significance

that the serum of the horse immunised with recently isolated strains from experimental poliomyelitis in the monkey appears to have developed neutralising, protective and curative power against the virus of poliomyelitis.

T. R. Whipham.

The diagnosis and serum treatment of anterior poliomyelitis (*'Journ. Amer. Med. Assoc.,'* 1917, lxviii, *p.* 817).—**A. Zingher** finds that the injection of immune and of normal human serum into the spinal canal during the acute febrile stage of poliomyelitis causes a distinct cellular reaction which is mostly polynuclear in type. The phagocytic action of these cells is beneficial in poliomyelitis. Such action is enhanced in immune serum by the presence of specific antibodies. It is preferable to use fresh serum, or serum which has been obtained under sterile precautions, passed through a Berkefeld filter and bottled without the addition of a preservative. The presence of a preservative and of hæmoglobin in serum enhances its irritating effect, and gives rise to the more severe types of reaction. For purposes of treatment it is important to diagnose the cases during the preparalytic stage of the disease by the typical group of early symptoms and the changes in the spinal fluid. These symptoms are fever, slight rigidity of the neck, jerky movements and fine tremors of fingers and hands. The diagnosis of poliomyelitis can generally be confirmed in the early stages of the disease by a bedside examination of the spinal fluid, which shows macroscopically the ground-glass appearance and a positive foam test. The laboratory examination will show an increased number of lymphocytes, an increased amount of albumin and globulin, and a marked reduction of Fehling's solution.

T. R. Whipham.

The treatment of epidemic poliomyelitis with horse-serum (*'Journ. Amer. Med. Assoc.,'* 1917, lxix, *p.* 1074).—**E. C. Rosenow,** after successful experiments in monkeys, advocates the use of horse-serum in cases of epidemic poliomyelitis. The routine procedure consists of making a spinal puncture for diagnostic tests and for relief of abnormal intraspinal pressure and of injecting the serum. From 5 to 30 c.c. of spinal fluid are allowed to escape, depending on the age of the patient and the amount of pressure. The fluid is made to flow slowly because it is believed that rapid withdrawal might be harmful. The cell-count and Noguchi's globulin test are made at the bedside, and if positive the injection of serum is given at once. The serum is activated with complement by adding one part of fresh guinea-pig serum to nine parts of the immune serum and incubating at 37 degrees for one hour. It is then diluted with equal parts of 0·85 per cent. salt solution. The diluted serum is injected slowly into a suitable superficial vein not later than thirty-six hours after activation. Approximately 2 c.c. of the mixture are injected per minute of time. The dose is varied according to the age of the patient and severity of the symptoms. Babies from about 1 to 2 years of age are given from 3 to 7 c.c. of serum at each injection—that is, 6 to 14 c.c. of the mixture; children from 2 to 5 years of age from 7 to 10 c.c., and older individuals from 10 to 20 c.c. The injections are repeated in from eight to twenty-four hours if necessary. The apparent good effects from the injection of serum are often striking. The headache, nervousness, restlessness and tremor often disappear promptly. The temperature and pulse-rate are lowered. A beginning paralysis often disappears in an astonishingly short time. A rapidly progressing paralysis is often arrested and improvement is unusually rapid. The postparalytic pains do not appear or are comparatively mild.

T. R. Whipham.

Acute poliomyelitis (*'Journ. Amer. Med. Assoc.,'* 1917, LXVIII, *p.* 1153). —**G. Draper** advocates the intrathecal injection of human serum as early as possible in cases of acute poliomyelitis. The serum should be obtained from patients who have suffered from the disease between 3 months and 4 years in the past. From 5 to 10 c.c. is to be injected slowly after the removal of a larger amount of spinal fluid so as to avoid the aggravation of symptoms of meningitis common to all therapeutical intraspinal injections or respiratory embarrassment and general collapse. The early diagnosis is made from the increase in the number of leucocytes and the increased globulin content of the spinal fluid. T. R. WHIPHAM.

Specific serum therapy of epidemic poliomyelitis (*'Journ. Amer. Med. Assoc.,'* 1917, LXIX, *p.* 1247).—**J. W. Nuzum** and **R. G. Willy** state that of 159 patients receiving serum in all stages of the disease 19 died—a mortality of 11·9 per cent. Among 100 cases occurring during the same period of time, in which the patients did not receive serum, 38 patients died—a mortality of 38 per cent. They have treated 152 patients in all stages of infantile paralysis, excluding 7 cases presenting respiratory paralysis on admission, with 11 deaths—a mortality rate of 7·2 per cent. During this same period of time a total of 301 cases were reported to the Health Department, with 97 deaths—a mortality of 32 per cent. This series of cases suffices to demonstrate the harmlessness of serum treatment when the serum is free from hæmoglobin, sterile to repeated cultures, and the injections are slowly made and all known rules of precaution are observed. The serum appears to possess the power of definitely preventing the onset of paralysis when administered early in the disease. In ten undoubted instances of poliomyelitis, in which no paralysis was detected at the time serum was administered, prevention of paralysis and complete recovery resulted in 100 per cent. The action of the serum is more definite in arresting the extension of paralysis and diminishing the severity than in effecting its disappearance. As in other acute infectious diseases, the earlier the serum is administered the more striking are the results obtained. Serum should be injected intraspinally in small doses and at the same time intravenously in larger amounts. The temperature has been employed as a guide to the dosage. The injection of serum is followed by a critical fall in the patient's temperature. Coincident with this there occurs a slowing of the pulse-rate and usually other definite clinical evidence of general improvement. In doubtful early cases the decision to use serum should rest on the bacteriological, chemical and microscopical examination of the cerebro-spinal fluid. T. R. WHIPHAM.

An anti-poliomyelitis horse-serum (*'Journ. Amer. Med. Assoc.,'* 1917, LXVIII, *p.* 1531).—**M. Neustaedter** and **E. J. Banzhaf** from experiments on monkeys feel that they are justified in using antipoliomyelitic horse-serum in human cases, especially when human serum is unobtainable. They will report later when a sufficient number have been treated.
T. R. WHIPHAM.

Fatigue and exercise in the treatment of infantile paralysis (*'Journ. Amer. Med. Assoc.,'* 1917, LXIX, *p.* 168).—**R. W. Lovett,** after an analysis of 1836 cases recorded in the poliomyelitis cliniques of New York, finds that weight-bearing exercise, such as walking to any extent in the first year after infantile paralysis, is apparently attended with risk, and is followed

in many instances by a change from partial to total paralysis in the foot-muscles, whereas in other parts of the body this deterioration does not occur. The evidence is also definitely to the effect that the right hand recovers much more effectively than the left, which may be interpreted as showing that the use of non-weight-bearing exercise is beneficial. This bears out the author's own clinical experience. T. R. Whipham.

Treatment.

The treatment of the toxæmia of common infections in children by intravenous injection of eusol (*'Edin. Med. Journ.,'* 1917, II, *p.* 143). —**J. Lorrain Smith, J. Ritchie** and **T. Rettie** record their experiences in a series of cases representative of the common infections met with in the Sick Children's Hospital, Edinburgh. These include infections with the ordinary pyæmic organisms, the meningococcus, the tubercle bacillus and the virus of rheumatism. No beneficial effect was produced in cases of tuberculosis or rheumatism, so that further observations are necessary in respect of these conditions. Beneficial effect was produced in infections with the ordinary pyogenic cocci, and this was usually observed immediately after the injection. In a few cases where the nature of the infection was not determined, as in a case of toxic diarrhœa, a similar result was obtained. When eusol is cautiously administered no untoward effects follow. In only one case of the series were symptoms of cardiac disturbance observed, and in this the record notes that the eusol was injected too rapidly. The results recorded go to prove that in certain cases the toxic symptoms of common infections yield to this treatment no less than those following the more definite toxæmias of wound infection and gas gangrene. Clinical histories of nineteen cases are given and the method of intravenous injection is fully described. J. Allan.

Dosage of antitoxin in diphtheria (*'New York Med. Journ.,'* 1918, CVII, *p.* 1071).—**A. J. M. Treacy** believes in giving one large dose from 15,000 to 35,000 in children or 20,000 to 40,000 or 60,000 in adults. The factors to be chiefly considered are the duration of the illness, the extent and thickness of the exudation, the type of involvement, the toxicity, the general condition and the age of the patient. No bad effects followed these large doses except an occasional serum rash. He gives the largest doses to the laryngeal types, the next largest to the nasal form, and least to the tonsillar variety. J. Porter Parkinson.

Variations of opsonic index during vaccine therapy for typhoid fever (*'La Pediatria,'* 1918, XXVI, *p.* 662).—**A. Corica** found that when using the vaccine intravenously a much more rapid rise in the opsonic index took place than was the case when it was used subcutaneously. There was a constant relation between the temperature and the opsonic index, the latter being in inverse proportion to the height of the former. During the negative phase of the vaccination the temperature rose markedly while the index was low; when, on the contrary, the index tended to rise, the temperature tended to fall. As soon as the index reached its maximum the temperature fell to normal. Examination of these facts led the author to conclude that the method of choice to obtain a rapid immunisation of the individual is the intravenous. The use of lysic vaccines, which can

generally be prepared of constant strength and partially deprived of toxic substances, is to be preferred in order to avoid manifestations of collapse.

VINCENT DICKINSON.

Camphor in acute influenzal bronchitis and broncho-pneumonia (*'Brit. Med. Journ.,'* 1918, II, *p.* 716).—**P. L. Giuseppi** speaks highly of camphor in large doses. The drug quickly clears up the lungs and lowers the temperature. A boy, aged 10 years, was suddenly taken ill with acute pains in the back and head. He had a temperature of 105·6° F. and the pulse-rate was 120. There was slight cyanosis, and marked wide-spread signs of bronchitis with patches of broncho-pneumonia were found over both lungs. On the following day the boy became unconscious. After the unconsciousness had lasted thirty-six hours camphor in pill form was given and within twenty-four hours the boy recovered consciousness. The lung signs gradually cleared up and the chest became normal four days after the camphor was first administered.

J. ALLAN.

Auto-serum treatment of chorea (*'Med. Record,'* 1917, XCII, *p.* 414).—**R. D. Moffett** says that prior to beginning treatment the patient should be kept in bed for four or five days and no chloral, bromide or arsenic given. If these drugs are exhibited coma may occur after the injection of serum. Fifty c.c. of blood is withdrawn from one of the arm veins, centrifugalised, and the serum pipetted into a sterilised vessel and placed in an incubator at body temperature. Twenty c.c. of the patient's cerebro-spinal fluid is then removed by lumbar puncture, and the serum is then slowly injected. The patient must be kept in bed for some hours after injection. The injection is repeated in five or six days. There are only slight sequelæ, *e. g.* vomiting, slight rise of temperature, stiffness of neck and frontal headache. Cases recover completely in three weeks, and recurrences are only noted in 5 per cent. The treatment depends on the supposition that anti-bodies develop in the blood which overcome the infection in the nervous system.

CHRISTOPHER ROLLESTON.

The treatment of hæmophilia (*'New York Med. Journ.,'* 1918, CVII, p. 611).—**L. T. de M. Sajous.**—The ordinary rule as to sex-incidence and transmission seems to have many exceptions. Grandidier stated one bleeder in thirteen is a female. Steiner reported one family in which only females were affected and the disease was transmitted directly from mother to daughter, and Littler one in which it was transmitted from father to son for three generations. Lavabee collected 37 cases of true hæmophilia in the newly-born, affecting the umbilicus or cord in 23 cases, the skin in 7, nose in 6, and bowel in 4. The mortality was 60 per cent. The cause of the persistent bleeding is impaired coagulability of the blood. According to Howell clotting is begun by neutralisation of "an antithrombin" by the thromboplastin of the tissues; the combination of antithrombin and prothrombin in the blood is broken up and the free prothrombin acts on the fibrinogen to produce a clot. He considers the difficulty in hæmophilia is the impairment in the circulating prothrombin. This prothrombin is contained in the blood-platelets, which are found to be abnormal in hæmophilia. Normal blood-platelets cause coagulation in hæmophilic blood in normal time, but blood-platelets from a case of hæmophilia do not. The blood-platelets in hæmophilia are thought to be abnormally resistant and do not give up their prothrombin readily enough. It has been shown that

calcium salts are not deficient in the blood of the majority of hæmophilics, and hence the disappointing results of treatment by these salts in most cases. In a few instances the subcutaneous injection of gelatin has appeared to stop the bleeding, but in addition to occasionally containing the spores of tetanus the injection causes severe pain and sometimes fever, etc., and cannot be recommended. Administration of blood-serum gives more complete results in purpura hæmorrhagica than in true hæmophilia, but appears to have been successful in some cases. Defibrinated blood has been used, but has no value over fresh blood-serum. Transfusion of human blood has given slightly better results than the other methods and reduces the clotting time of the hæmophilic blood, and has the advantage of supplying more red blood-cells. The administration of raw meat or meat-juice was very successful in a case recorded by Gubb in 1908. Organic extracts of the thyroid or the ovary have been used, the former apparently with some slight success, which is said by Sajous to be due to the thyroid stimulating the adrenals to an increased production of adrenoxidase—a ferment which acts a part in coagulation and which is contained in the blood-platelets.

J. Porter Parkinson.

The hæmolytic power of antimony preparations (*'La Pediatria,'* 1916, xxiv, *p.* 667).—**G. Caronia** brought into contact almost equal quantities of defibrinated blood on a 50 per cent. emulsion of red corpuscles, with various dilutions in distilled water of the two preparations recently introduced for the cure of Leishmaniosis—*i. e.* tartarated antimony (Di Cristina) and acetyl-p-amino-phenyl-antimoniate of soda (Caronia). In a second series of tests salt solution of various strengths was added. The two antimonial salts showed a striking hæmolytic power, which was markedly increased by the addition of chloride of sodium. The author, without attempting to explain the mechanism of the phenomenon, records the fact from practical application in treatment, and reports that the use of these antimonial salts in weak solution and in saline solution of 0·70 to 0·75 per cent. is free from any inconvenient effects. Vincent Dickinson.

Lactic acid cultures in the treatment of difficult feeding cases (*'New York State Journ. Med.,'* 1918, xviii, *p.* 13).—**F. V. Bogert** maintains that the treatment of infections of the gastro-intestinal tract in infancy and childhood is primarily one of diet. Upon the food ingested depend the growth and virulence of the organisms responsible. The micro-organisms responsible may be divided into two groups—(1) the various forms of dysentery and other organisms than the gas bacillus, and (2) the gas bacillus and other organisms. The dysentery group feed upon a proteid or carbohydrate diet producing harmful products from the proteid, harmless from the carbohydrate. They therefore cease to cause trouble if proteids are withheld from the food. The gas bacilli, on the other hand, thrive and cause disturbance where there is an excess of carbohydrate. Their growth is inhibited by lactic acid, and they cease to develop when a sufficient number of lactic-acid-producing organisms are present in the bowel. In very acute cases one's attention is called to the infection by diarrhœa. There is, however, a large group less acute or chronic in nature, occurring in both infancy and later childhood, in which diarrhœa is not a prominent symptom or is absent altogether. These cases exhibit a marked toxæmia, manifested in infancy by evidence of intestinal indigestion, colic, wasting and alarming nervous disorders, including convulsions, and in later childhood by tardy

physical development and various functional nervous disorders. Colicky babies and infants, as well as older children, with severe chronic digestive disturbances, whose stools show distinct gas production upon culture, are in his experience almost invariably benefited by cultures of lactic acid bacilli in frequent and full dosage. Undoubtedly in the milder infections, diet alone, lowering of the sugar and fat percentage of the food will suffice. The improvement, however, is apparently far slower. On the other hand, cases showing similar symptoms but no gas have not, as a rule, responded. Notes of several cases are given. Success of the treatment depends not only upon the organisms involved but upon the regulation of the diet as well, realising that the gas bacillus feeds upon carbohydrates and produces its ill-effects by its action upon this element of the food. Carbohydrates must therefore be reduced, but not completely eliminated, because the lactic-acid-producing organism requires carbohydrate for its development. The author employed liquid cultures which must be kept cold, otherwise they will very probably destroy themselves by over-production. J. Allan.

Sarcoma and radium (*'Med. Press,'* 1917, II, *p.* 155).—**D. Macartney** reports three cases of sarcoma in children treated with radium. Case 1 had a sarcoma of the left lower jaw. Difficulty in breathing had necessitated tracheotomy. The tumour was opened, a tube with radium in it inserted and kept in for twenty-four hours. For two years the child kept well, swelling almost gone and no sign of recurrence anywhere, but she has now been lost sight of. Case 2, a boy, aged 12 years, came under observation for a rapidly growing recurrence, after removal of sarcoma of the right side of the face. There was a large swelling of the tissues over the right upper jaw, closing the eye. In this case the radium was laid on the tumour, a six hours' exposure being given. Radium was applied on two subsequent dates. About two months after the first application the right side of his face was smaller than the left; the tumour had gone, leaving only a slight thickening of the malar bone behind. General health much improved. Case 3, a girl, aged 9 years, with a sarcoma involving the left lower jaw, has been treated somewhat similarly to Case 2 with good effect. J. Allan.

Ductless gland therapy (*'Practitioner,'* 1919, CII, *p.* 259).—**J. L. Masterman-Wood** describes a case in a boy, aged $6\frac{1}{2}$ years, of acute spasmodic asthma, much improved from thyroid treatment. He considers the symptoms pointed to hypo-thyroidism. F. R. B. Atkinson.

On the importance of de-ionisation in the treatment of plumbism in Queensland children (*'Med. Journ. Austral.,'* 1919, I, *p.* 272).—**J. L. Gibson.**—A two-bath de-ionising apparatus was erected at the Children's Hospital in Brisbane and the following cases were subjected to treatment: (1) Girl, aged 7 years, just recovered from a severe attack of ocular plumbism. Her vision was—R. $\frac{6}{12}$, L. $\frac{6}{18}$, and presumably her system was clear of lead. A 25-m.a. current was passed through her for half an hour, $7\frac{1}{2}$ to $8\frac{1}{2}$ volts and 25 m.a. of current. For young children 25 m.a. are sufficient. The negative and positive plates were examined for lead after the current had been passed, and $\frac{1}{100}$ gr. of lead was found on the negative pole, but none on the positive. About a dozen baths of half an hour each were given. The child discharged with both eyes $\frac{6}{9}$, and only slight partial post-neuritic atrophy in each disc. (2) Girl, aged 8 years, with blue lines on the gums. After eight baths the blue lines disappeared

and her condition rapidly improved. (3) Girl, aged 5½ years. Great improvement after five de-ionisations: disappearance of squint, cessation of twitching, and ability to move the left arm, which was previously rigid. After seven baths her left arm was normal and the blue line on the gums was disappearing. The apparatus consists of a hand-bath or trough and a foot-bath or trough in each of which is a large aluminium plate. The plate in the foot-bath is connected with the positive pole of a battery, and that in the hand-bath with the negative pole. Both feet are placed on the aluminium plate in the foot-bath and both hands on the plate in the hand-bath. The bath contains salt solution to cover the plates and the hands and feet. The bath is given for half an hour daily.

F. R. B. Atkinson.

Reviews.

Précis d'Hygiène Infantile et de Puériculture. Par le Dr. Combe, Professeur de Clinique infantile à l'Université de Lausanne. Paris: Baillière et Fils, 1918. Price 16 frs.

This is a paper-backed volume of 600 pages, with a large number of illustrations. It enters very fully into all matters regarding infant hygiene, such as the management, clothing and feeding of the baby.

Considerable attention is paid to the question of the foods used in infant feeding, and an excellent discussion of the advantages and disadvantages of the various foods, the hygiene of the nursing mother and the hygiene of the farm is given.

It is a more advanced book than most of these books are, and much of the material is for advanced students in infant hygiene.

Dealing with the subject of infant mortality, the comparison of that in different countries places Germany at the head of the list with over 20 per cent., and then in order—Italy, Spain, Holland, France, Belgium, England, Switzerland, Sweden, down to Norway with only 9·7 per cent. This is for the years 1905–1910. A diminution in Switzerland from 16·3 per cent. in 1891 to 9·6 per cent. in 1913 is shown.

The author sums up: "Un nourrisson, qui a des organes intacts et résistants, . . . ne meurt que de maladies évitables, et même facilement évitables."

The question of clothing hygiene is entered into very thoroughly, and numerous illustrations of details are given.

An interesting chapter is that relating to the hygiene of the locomotor system; in it the author gives his views as to the effect of constant malposition of the infant in the arms of the mother, or in the cot or perambulator, in the causation of curvature of the spine. The need for carrying or putting the child in a good position, and not always putting it in the same position, is emphasised. This chapter also deals with the development of walking and the care of the limbs during that development.

With regard to the advantages of wet-nursing over artificial feeding, the decisions come to are (1) that well-conducted and well-supervised artificial feeding gives, *for a normal infant*, results which are as good as those of wet-nursing, and (2) that wet-nursing should not be used except for a child

whose life is in danger through feeding difficulties, and (3) that great care should be taken to see that the wet-nurse's child does not suffer. Lactagogues of the medicinal type are not in favour with the author.

With regard to mixed feeding, he decides that it should be alternate, and not complementary, stating that the mixing of the two caseins at one meal is not a good thing, and the incomplete emptying of the breast has a bad effect on the breast-milk.

The book is an excellent one of its kind, and though some of the illustrations are somewhat crude, yet they serve their purpose.

C. P. L.

The Physiological Feeding of Children. By Eric Pritchard, M.A., M.D., M.R.C.P. London: Henry Kimpton, 1919. Price 3s. 6d. net.

This is a chapter written for the fourth edition of the author's book on "The Physiological Feeding of Children," embodied in the form of a small paper-backed book of some sixty pages.

The subject is of very great importance, and it is one which is very often dealt with loosely and in general terms.

The author has gone to great trouble in working out dietaries based on exact and painstaking calculations of caloric values, and he gives at the end of the book diet-sheets, which embody the results and which are made out for each day of the week at the various age-periods. These diet-sheets, founded as they are on an exact and scientific basis, are excellent. The importance of balance, or the right proportion of proteid, fat and carbohydrate is rightly emphasised. We agree that in too many instances children are given too much cow's milk.

The question of providing a diet which will exercise the teeth and promote chewing and yet not prove indigestible is dealt with. It is one very difficult of solution, and care must always be taken lest apples and fruits are given to excess, with the idea of relieving constipation or promoting chewing. Given in excess such foods may, contrary to intention, cause constipation and indigestion.

The author also points out the need of effecting changes of diet gradually—a very important point.

The statement that many children are very wasteful machines, taking in far more food than they can possibly utilise, is apposite, and touches on one of the greatest causes of feeding difficulties in young children. It is in connection with changes of the diet of such overfed children that he emphasises the need of gradual transition to a smaller and more balanced diet. We agree that for the majority of young healthy children supper is not needed, three meals a day being quite sufficient, and that the supper, if given, should be a light, clear soup in preference to milk.

There are other and very interesting points dealt with in the book, such as the importance of salts and vitamines, and of absorbability of the food taken, all of which the author has dsicussed and brought into the preparation of his diet-sheets.

C. P. L.